



REPORT AND RECOMMENDATIONS OF THE COUNTY EXECUTIVE'S TRANSIT TASK FORCE



MAY 2012





COUNTY EXECUTIVE'S TRANSIT TASK FORCE

May 10, 2012

The Honorable Isiah Leggett
Montgomery County Executive
Executive Office Building
101 Monroe Street, Second Floor
Rockville, Maryland 20850

Dear Mr. Leggett:

On behalf of the Montgomery County Executive's Transit Task Force ("Task Force"), I have the honor to transmit herewith the **Report and Recommendations of the County Executive's Transit Task Force**.

It has been my privilege to chair the Task Force, and to serve with colleagues whose commitment, dedication and experience have contributed so much to the effort. It has also been a pleasure to work with Assistant Chief Administrative Officer Thomas Street, whose professionalism and support for the Task Force has been extraordinary.

I know that I speak for each of my colleagues when I express our appreciation for the opportunity to serve you and Montgomery County. We hope that our efforts will result in the adoption of our recommendations to establish a transit network through the planning, development and operation of a sophisticated rapid transit vehicle system within Montgomery County.

Again, thank you for your leadership and for giving me and the members of the Task Force this opportunity to serve.

Very truly yours,

A handwritten signature in blue ink, reading "L. Mark Winston".

L. Mark Winston, Chair
Montgomery County Executive's
Transit Task Force



The County Executive's Transit Task Force

Members:

Marilyn Balcombe, CCT Coalition and Gaithersburg-Germantown Chamber of Commerce

Roger Berliner, Montgomery County Council

Marc Elrich, Montgomery County Council

Jonathan Genn, Percontee, Inc.

David Hauck, Sierra Club

Arthur Holmes, Montgomery County Department of Transportation

David McDonough, Johns Hopkins University

Richard Parsons, Parsons & Associates

Wayne Phyllaier, Purple Line Now

Jonathan Sachs, Montgomery County Chamber of Commerce

Craig Simoneau, City of Rockville

Tina Slater, Action Committee for Transit

Francine Waters, Lerner Companies

Daniel Wilhelm, Montgomery County Civic Federation

L. Mark Winston, Glazer Winston, Honigman, Ellick, PLLC; and Chair of Task Force

Ex-Officio Members:

Casey Anderson, Montgomery County Planning Board

Nat Bottigheimer, Washington Metropolitan Area Transit Authority

Francoise Carrier, Montgomery County Planning Board

Brian Feldman, Maryland House of Delegates

Robert Garagiola, Maryland State Senate

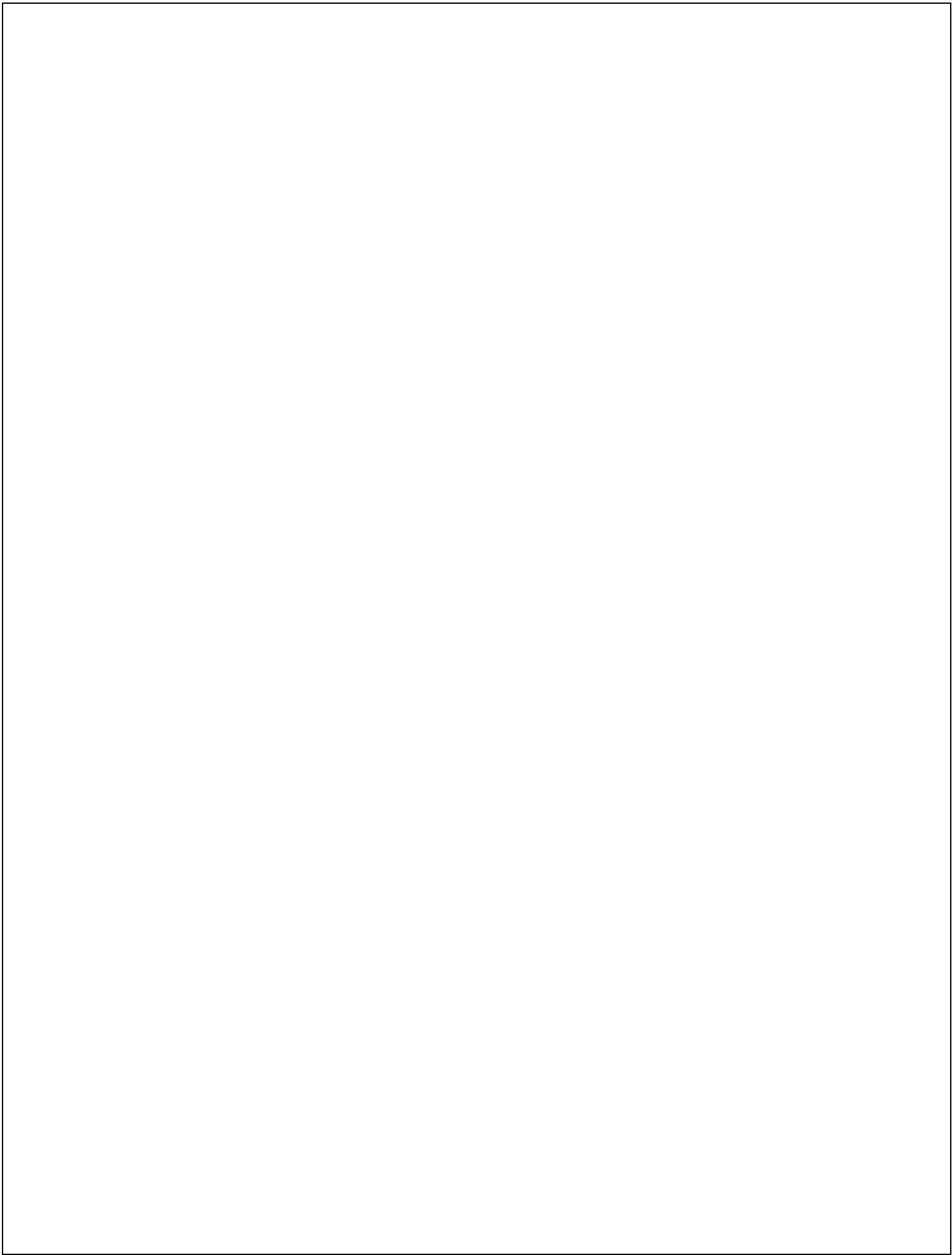
Joan Kleinman, Office of United States Representative Christopher Van Hollen

Darrell Mobley, Maryland Department of Transportation

Kenneth Reichard, Office of United States Senator Benjamin Cardin

Steve Silverman, Montgomery County Department of Economic Development

Thomas Street, Office of the County Executive, Montgomery County, Maryland



DISCLAIMER

Several members of the Task Force have been appointed because they represent specific groups or organizations by which they are employed or of which they are members. Participation of those members in the work of the Task Force, and their subscribing to this report, does not necessarily reflect the opinions of such groups and organizations, and is not binding on them. With respect to the individual members of the Task Force, while a majority of the members of the Task Force support the contents of the Report, individual members may have different opinions and views with respect to particular matters contained in the Report. Finally, while *ex officio* members have participated in the discussions and work of the Task Force, they did not participate in voting on the Report.



PRELIMINARY STATEMENT

Following up on previous proposals and recognizing the critical need to develop more effective and innovative strategies to relieve traffic congestion in Montgomery County, Montgomery County Executive Isiah Leggett authorized the Montgomery County Department of Transportation (“MCDOT”) to commission a study in 2010 to assess the feasibility of a potentially novel, comprehensive, Countywide rapid transit network. MCDOT engaged the services of the consulting firm, Parsons Brinckerhoff, to study the preliminary feasibility of such a rapid transit system. In July of 2011, Parsons Brinckerhoff issued its report entitled “Consultant’s Report for a Countywide Bus Rapid Transit Study” (the “PB Study”), concluding that such a rapid transit system was indeed feasible and a worthwhile endeavor for Montgomery County.

County Executive Leggett announced the formation of the County Executive’s Transit Task Force on February 23, 2011 (the “Task Force”). The purpose of the Task Force was to develop a plan for the implementation of a comprehensive and effective transit system for Montgomery County, Maryland (the “County”).

One of the great strengths of the Task Force, as appointed by the County Executive, was the expansive diversity of experiences, perspectives, and professional expertise of its members. The Task Force was composed of a broad range of interests, including civic leaders (e.g., the Montgomery County Civic Federation), transit advocates (e.g., Action Committee for Transit and Purple Line Now), environmental advocates (e.g., Sierra Club), minority representation (e.g., Latin American Advisory Group), representatives of local chambers of commerce, business executives, real estate developers, transportation professionals (also representing the interests of automobiles and other modes of travel), as well as representatives of federal, state, county, and municipal governmental agencies. With this extraordinarily broad array of interests and perspectives, the Task Force achieved a remarkable consensus on all the imperatives of implementing this proposed RTV network, including the critical attributes and design of the RTV network, the corridors and phasing of the RTV network, and the analysis of financing mechanisms to fund the construction and operation of the RTV network.

The full Task Force met 31 times between March 23, 2011 and the date of this Report. At early meetings the Task Force was briefed on: (a) pending applications for Federal funding of the Purple Line and the Corridor Cities Transitway; (b) the condition

of the Maryland State Transportation Trust Fund; (c) the role and performance of the Ride-On bus program; (d) the authority of and the conditions under which the County may form special taxing districts and issue bonds to fund transit infrastructure development; (e) alternative ways in which public-private partnerships may be used to contribute to the development and operation of a transit system; (f) rapid transit systems operated in other communities; and (g) prototypical capital costs for the development of rapid transit networks and operating costs of such networks. The Task Force was also briefed on the “PB Study.”

Representatives of the Task Force visited other communities operating bus rapid transit-type corridors and systems, including Seattle, Washington; Eugene, Oregon; and Cleveland, Ohio.

The Task Force formed five working groups to address major topics requiring consideration. These working groups included 1) the Working Group on System Design Attributes, 2) the Working Group on Ancillary Facilities, 3) the Economic Case Working Group, 4) the Working Group on Routes and Development Sequencing, and 5) the Finance Working Group. Each of these working groups met on numerous occasions to discharge their responsibilities. Recommendations from the various working groups were presented to the full Task Force and appropriate actions were taken. All meetings were open to the public. The Task Force maintained a website where it placed summaries of its meetings, copies of documents and presentations submitted to the Task Force, as well as a schedule of meetings.

As a result of the generosity of the Rockefeller Foundation as acknowledged below, the Task Force had the advice and assistance of the International Transportation Development Program, as well as the ability to retain the services of The Traffic Group, Inc. to assist in preparing conceptual plans for the RTV network, and The Sage Policy Group, Inc., to assist in examining the economic impact of building an RTV System.

Finally, the Task Force benefitted from the cooperation of numerous officials and staff members of several government agencies, including (but not limited to) the Maryland Department of Transportation, the Montgomery County Department of Transportation, the Montgomery County Planning Board, the Montgomery County Department of Finance, the Montgomery County Department of General Services, Montgomery County Department of Technology Service, the Office of the County Attorney, and the City of Rockville.

This document is the result of the efforts of the above-noted working groups and of individual Task Force members.

ACKNOWLEDGMENTS

The Task Force wishes to acknowledge the invaluable assistance and support from various organizations and individuals.

First and foremost, the Task Force has been the beneficiary of a grant from the Rockefeller Foundation through the Montgomery County Revenue Authority. The importance of this support cannot be overstated. Those funds have enabled the Task Force to conduct two important studies that would have been impossible without that support. In addition, as a result of the grant, the Task Force has been able to send representatives on field trips which informed its analysis. Furthermore, the support of the Foundation has encouraged the Task Force on the importance and significance of the Montgomery County RTV project to other jurisdictions and municipalities in the country.

Second, although the Task Force has engaged and compensated its two primary outside consultants, The Traffic Group, Inc., to perform work on a concept plan for an RTV system, and to assist the Task Force in developing construction cost estimates and the Sage Policy Group, Inc., to perform an economic impact study, the compensation provided to those consultants does not adequately reflect either these consultants' commitment and professionalism, nor the level of their efforts. The Task Force cannot adequately express its appreciation to these two consulting groups.

Third, during the process of considering the "economic case" relating to the transit system being proposed by the Task Force, David McDonough, the chair of the Economic Case Working Group, enlisted the expert assistance of several individuals, whose experience and judgment offered unique and valuable perspectives. These include Dr. Stephen Fuller, Center for Regional Analysis, George Mason University; Thomas L. Osborne, AICP, Patton, Harris, Rust & Associates, A Pennoni Company; Douglas R. Porter, Director, Growth Management Institute; Diane Ratcliff, Maryland Transit Administration; Michael Replogle, ITDP; Jacob Sesker, County Council Staff; Paul Tischler; Marc Weiss, Chairman and CEO, Global Urban Development; and William Vincent, Breakthrough Technologies Institute.

Finally, although the individual names are too numerous to list here, the Task Force is grateful for the constructive involvement of representatives of various governmental agencies and groups, including but not limited to: the Maryland

Department of Transportation and its modal administrations; the Montgomery County Department of Transportation, the Montgomery County Department of Finance; the Montgomery County Department of Finance; the Montgomery County Department of General Services, the Montgomery County Department of Technology Services, and the Montgomery County Planning Board and its staff.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
--------------------------------	----------

REPORT AND RECOMMENDATIONS OF TASK FORCE

I. The Challenges

A. Central Role of Transportation	1
B. Current Conditions: A Dubious Distinction.....	2
C. Current Trajectory	3
D. Need for Course Correction.....	4
E. Need for Increased Capacity to Move People and Commerce	5
F. Reengineering the Sustainable Complete Street	6
G. Ridership Metrics.....	10
H. Flaws and Risks of “No Build” Approach	12

II. The Case for the RTV System Now

A. RTV as an Approach that will Increase Capacity and Reduce Congestion	16
B. The Economic Imperative	22
C. Creating Vibrant, Livable Communities With a Sense of Place.....	28
D. Environmental Benefits	31
E. Serving Major Corridors, Creating Connections and a Network Effect	33
F. Integrate the RTV System into Multi-Modal Transit Network	35
G. Serving Existing Neighborhoods	36
H. Our Social Contract.....	38

III. The Proposed RTV System

A. Designing the Attributes of a “World Class” System	39
B. Proposed Corridor Network	44
C. Proposed Phasing of Build-Out	52
D. Operational Technology and Storage and Maintenance Facilities	59
E. Coordination and Integration with a Comprehensive Multi-Modal Transportation Network	62

IV.	Constraints on Implementation	
A.	Physical Constraints	65
B.	Environmental Constraints.....	65
C.	Regulatory Constraints	67
D.	Institutional Constraints	67
E.	Financial Constraints.....	69
V.	Implementation Approach	
A.	Development Methodology	71
B.	Organizational Plan	80
VI.	Financial Plan	
A.	General Considerations	82
B.	Proposed Financing Structure	82
C.	Capital Investment.....	89
D.	Operating Expenses	92
E.	Financial Scenarios	94
F.	Policy Judgments to be Made Regarding Financial Scenarios	112
VII.	Recommendations	113
VIII.	Conclusion	119
	GLOSSARY OF TERMS.....	122

APPENDICES

Appendix A. Report of the Working Group on System Design Attributes.

1. Report of Working Group A
2. Graphic depictions of vehicles
3. Graphic depictions of stations and other attributes
4. Discussion of RTV as Method To Increase Capacity and Decrease Congestion

Appendix B. Report of the Ancillary Facilities Working Group.

1. Report on Maintenance and Storage Facilities
2. Report on Dedicated RTV System Parking Facilities
3. Report on Information Systems

Appendix C. Report of the Economic Case Working Group.

1. The Economic and Fiscal Impact Study of Sage Policy Group, Inc.
2. The Economic and Fiscal Impact Study of Parsons Brinkerhoff Consulting Company for the Corridor Cities Transitway

Appendix D. Report of the Working Group on Routes and Development Sequencing.

1. Proposal for Route Network and Sequencing
2. Proposal of Route Network Concept Plan from The Traffic Group, Inc. (available on CD Disk upon request from Montgomery County Public Information Office)
3. Concept Plan of the Kittleson Company for Stage One (9.1 miles) of the Corridor Cities Transitway as RTV
4. Maps of the RTV Network and Phases Thereof
5. RTV “Typicals” – TTG Cross Sections
6. Montgomery County DOT Comments on TTG Concept Plan

Appendix E. Report of Finance Working Group and Financial Appendices.

1. Presentation of Public Financial Management, Inc. to Task Force
2. Presentations of Public Financial Management, inc. to Finance Working Group
3. Detailed charts, graphs and tables referred to in Report
4. Blue Ribbon Commission Report
5. Funding Scenario E

EXECUTIVE SUMMARY

The County Executive appointed the Transit Task Force on February 23, 2011. The Task Force is comprised of a group of community leaders, elected and appointed officials, and transportation and planning experts from state, regional, and local government agencies. The Executive's directive to the Task Force was to develop a plan for the implementation of a comprehensive and effective rapid transit system for Montgomery County.

The Task Force has met 31 times over the last year as a full body, and many more times as working groups formed to address specific issues.

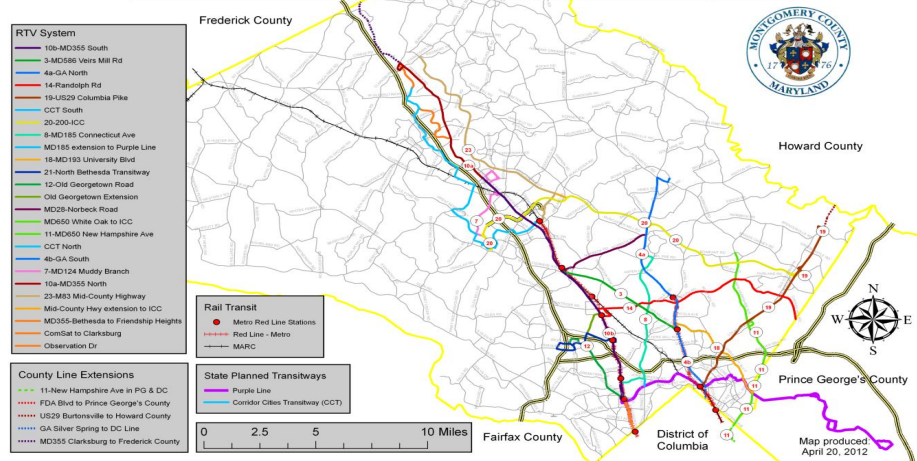
The Task Force embraced its mission, and refined its definition. It saw its overarching goal as proposing an innovative, "best-in-class," rapid transit system for Montgomery County that would expand accessibility to reliable and timely transit options, and thereby transform the way in which residents, workers, and visitors choose to travel through and within Montgomery County and, ultimately, the entire Washington Metropolitan Area.

* * *

The Case for a Rapid Transit System

After over a year of deliberations, the Task Force is recommending an approximately 160 mile system (for map see **Appendix D-4**) that creates a comprehensive transit network across the County, providing both north and south, as well as east and west, transportation opportunities. The system proposed consists of a sophisticated surface transit system, using vehicles that will operate more like "light rail on rubber tires" than what is more typically referred to as "bus rapid transit". The Task Force is recommending that the system be built in phases in order to mitigate both construction and affordability issues. The Task Force is providing options for the entire system to be built in as few as nine years or as many as 20 years.

Transit Task Force Full Rapid Transit System



Transportation is a foundational element in government's and the private sector's ability to achieve their goals in a wide range of activities, each of which requires access and mobility in the County and throughout the region. Investment in transit must be undertaken to enable any community to meet its most basic needs of moving people and commerce. Failure to make these necessary investments undermines our productivity, economic competitiveness, environment, safety and quality of life. This is the inexorable logic of why creating adequate transportation capacity must be a high priority in any community.

For the 20 year period between 2010 and 2030, the Washington Primary Metropolitan Statistical Area ("WPMSA") is forecasted to experience an employment growth of approximately 1.05 million net new jobs. Montgomery County's share of that projected employment growth during those same years is projected to be approximately 163,000 net new jobs.

Today, the WPMSA already suffers from the most congested roads in the country. The Transportation Planning Board projects the region to add to the already worst congestion in the nation yet another 3.9 million daily vehicular trips, another 25 million vehicle miles traveled daily, and another 250,000 daily transit trips during the same 20-year period.

Even more daunting, if the current trends of exurban/rural sprawl around the WPMSA were to continue, today's estimated approximately 230,000 daily work trips from outside the WPMSA into and through the WPMSA (i.e., the pass-through traffic funneled through the WPMSA) is projected to **more than triple** to approximately 700,000 by the year 2030. With approximately 75% of commuters traveling alone in

single occupancy vehicles (“SOVs”), and another 10% of commuters traveling in carpools, such an automobile-dependent commuting pattern is unsustainable.

The great challenge that must be addressed is to enhance the capacity of our existing transportation network to accommodate growth in population, employment and the need for people and commerce to move. The Task Force concluded that implementing an approximately 160 mile rapid transit vehicle (“RTV”) system based on sophisticated, surface level bus-type technology is the most efficient way to increase capacity and serve a broad range of public and private interests.

The proposed RTV network is needed to provide safe, convenient, affordable, sustainable transportation that will serve existing residents and employees and will enable the County to achieve its current transit-oriented “smart growth” land use and growth forecasts. The RTV system will also provide a long-term sustainable platform for continued growth and development in the County, beyond the current 20 year growth projections. To achieve “smart growth” and successfully compete for its fair share of the projected job growth in the Region, the County needs to plan, fund, and build a high performance rapid transit system, which enables the County to achieve its “smart growth” vision to the extent embodied in its General Plan, Comprehensive Growth Policy and approved Master Plans.

Some undoubtedly will argue that the Task Force’s vision for the role of transit and land use represents a departure from policies favoring an automobile-oriented pattern of suburban development. The Task Force believes this view represents a misreading of the historical record, which reflects a consensus formed more than 50 years ago in favor of organizing development around transit. As the 1962 introduction to the General Plan argued:

“One of the biggest private costs you pay as a suburbanite is transportation – the second car and the endless chauffeuring of the kids here, there and everywhere. These costs can also be curtailed by compact instead of scattered development, better local bus routes, shorter distances to local community facilities, and the use of rapid transit for major commuting trips.”

Similarly, the 1964 General Plan (the “wedges and corridors” plan), the foundational document in land use and transportation planning in Montgomery County, observed:

“An efficient system of transportation must include mass transit sufficient to meet a major part of the critical rush-hour need. Without rapid transit, highways and parking garages will consume the downtown areas; the advantages of central locations will decrease; the city will become fragmented and unworkable. The mental frustrations of congested highway travel will take its toll, not to mention the extra costs of second cars and soaring insurance rates. In Los Angeles where an automobile dominated transportation system reigns supreme, there is still a serious commuter problem even though ‘approximately two-thirds of the city’s downtown section is given over to streets and parking and loading facilities.’ There is no future in permitting the Regional District to drift into such a ‘solution.’”

When the “wedges and corridors” plan was amended in 1969, the relationship between transit and land use was articulated more clearly, and the new version of the plan called for “a coordinated rail-bus rapid transit system that is as capable of shaping desirable growth patterns as it is in serving present population and employment centers.” The 1969 refinement also recognized the need to “[f]oster a pattern of land development which reduces auto trip length.”

By the time of the most recent modifications to the General Plan in 1993, the need for greater emphasis on orienting development around transit – and on delivering the transit envisioned by earlier iterations of the “wedges and corridors” plan – had become obvious. With regard to the area along I-270, Montgomery County’s “corridor” in the “wedges and corridor” scheme, the authors of the 1993 refinement noted, “Its present achievements in fulfilling the vision of the 1964 General Plan and the 1969 General Plan Update have been modest. The corridor is plagued by congestion and poor pedestrian amenities. It is characterized by surface parking lots, strip retail, and sprawling development, instead of densely developed identifiable centers.”

What is the reason for the failure to achieve the General Plan’s vision? “Demand to develop the I-270 corridor came well in advance of the transit stations envisioned in the 1964 General Plan. Consequently, early development was characterized by low-density office parks loosely strung along I-270, with housing located away from the main arteries of travel.” The urban ring, which extends beyond the beltway to White Oak in the eastern part of the county, was likewise unable to fulfill the expectations outlined in

the 1964 and 1969 plans in the absence of transit service that could provide both the economic incentive and the organizing logic for redevelopment.

The Task Force believes that an RTV system is essential to fulfill the vision for land use as well as transportation that was spelled out in 1964 and elaborated in later refinements to the General Plan. In fact, a high quality transit network matched with transit supportive mixed uses and density is not only consistent with but required by the wedges and corridors plan.

New public transit systems, which are consciously designed to improve the riding experience of users, have shown that they can lure people out of cars and onto transit. Key features that contribute to a better rider experience are more frequent service, stylish and comfortable vehicles, improved travel times and well-designed stations. If successful in attracting sufficient numbers of new riders, such an expansion of the transit system may lead to a net reduction in greenhouse gas emissions and encourage mixed use, denser development around some stations and along portions of transit corridors instead of less dense development in outlying “greenfield” areas.

The Proposed RTV System

The most important attribute of the proposed RTV system is:

To the maximum extent possible, having physically separated, dedicated RTV lanes THROUGHOUT THE ENTIRE SYSTEM, so the system’s RTVs would not become comingled into mixed general traffic.

In selecting the corridors that will be the basis for all routes in the RTV system, the Task Force sought to deal with the most congested corridors and to provide for east-west connectivity as well. The Task Force has proposed that the network be built in three phases to ensure minimal community disruption during construction.

The Task Force is also making a number of recommendations regarding how the proposed system should be funded and financed. **The Financial Plan contains an innovative approach to combining State and local resources to bring the system to fruition. However, the objective of the plan is to provide the County Executive and the County Council a broad range of concrete options from which they may choose.**

The choice of the local source of revenue is based on the use of special real property taxing districts to generate the funding for both construction and operating expenses. Utilizing the special tax district approach to fund operations would require a

change in state law. (Currently, only design and construction activities can be funded using the special tax district approach.)

Another funding source included in the Task Force's financial models is an assumption regarding State and/or County general fund assistance. State funding is suggested because of the inclusion of the Corridor Cities Transitway ("CCT") in the proposed network, as well as the fact that traditionally the State provides capital cost funding for major State transportation projects. Since the CCT is a State project, it is only fitting that the State pay the debt service on debt issued to construct the CCT. Also included in some of the funding scenarios is an assumption that beyond the year 2020 (the year in which the Purple Line is projected to be operational), the State would fund up to 50% of debt service on the balance of the proposed RTV system. This assumption is based upon the belief that the proposed RTV system will greatly improve capacity on State highways in the County and that, but for the proposed system, the State would be making very large dollar investments in roadway improvements to relieve future congestion issues. Furthermore, the economic and fiscal benefits of a completed RTV system will benefit the State as a whole, as well as the County.

Although not explicitly stated in the various funding scenarios, it is also possible that beyond 2018, there may be capacity in the County's Capital Improvements Program for some general fund assistance to help fund capital construction investments.

Finally, in the body of the report, a number of arguments are made for the critical nature of this project including:

1. It is the most cost-effective way for the County to address its transportation capacity and traffic congestion issues;
2. It is the County's best hope for creating vibrant, live-work communities for existing, as well as future, residents and employees that reduce our reliance on automobiles to get to and from work;
3. It is needed to implement the County's already adopted land-use decisions specifically in the areas of the Great Seneca Science Corridor ("GSSC") Master Plan and the White Flint Master Plan. Both of these master plans have staging elements that are tied to transit. The GSSC Master Plan specifically ties development to the availability of the CCT, and the White Flint plan ties the ability of development to the increase in the modal split for non-auto transportation; and

4. Another important case for building the system is the one made by the Center for Regional Analysis. Its study has projected that Montgomery County has the potential to receive 163,000 net new jobs over the next 20 years. Realizing these jobs is predicated on the existence of adequate housing and transportation capacity. Without the transportation capacity the forecasted jobs may not come to the County. They may go elsewhere, either to other jurisdictions in the region or out of the region entirely. This will likely result in increased congestion on our roads - without the attendant economic and fiscal benefits that would occur if such jobs and housing were created in the County. In the Task Force's view, the proposed integrated rapid transit system provides the best option for providing the transportation capacity for these forecasted jobs to become a reality. At the same time, it will positively impact our congestion, environmental quality and general quality of life needs.

In considering a financial plan for the RTV system, the Task Force has, first and foremost, been focused on advising the County Executive and other decision-makers on the most feasible structure for funding the project. The Task Force has also considered various detailed elements of capital investment and operating expenses of the proposed RTV system, and will address and give guidance on these subjects to the extent practical.

The Task Force is asking readers to focus primarily on the *structure* of the financial plan, and that any specific capital investment data should be viewed as illustrative of potential costs, and not hard estimates. The Task Force's goal in producing capital investment numbers is to present an order of magnitude, and to allow decision-makers to see how costs at that level would play out within the structure of the financial plan.

The Task Force believes that what is presented in the Report represents an innovative approach to funding and financing that gives the County Executive, County Council and other decision-makers a broad range of choices that balance cost to the taxpayer against the need to address an urgent problem and to quickly achieve the many benefits to the County and State of building the proposed system: One that uses State and local resources effectively and in the public interest. If the County makes the necessary reasonable short term investment in further planning for the RTV system, the proposed project may move ahead without losing any time, while our political institutions work out a resolution to the difficult issues with which they are presented relating to transportation and other matters.

Although still a rough estimate, the capital costs for the RTV system are estimated to be \$1.83 billion in current year dollars. Annual operating costs for the system are estimated to be \$1.1 million per mile. This estimate was developed from a range of sources including consulting studies and estimates provided by other jurisdictions where Task Force members made site visits.

The Task Force recommends that the capital costs of the proposed RTV system be primarily financed by debt. The Task Force proposes that debt service on the debt be paid from a combination of local and State revenue sources. Given the significant constraints facing the Federal Transit Administration's (FTA) New Starts program and uncertain future funding prospects, the Task Force concluded it would be most prudent to design a funding mechanism for the RTV system that was not dependent on federal funds.

For each of the funding scenarios, readers are cautioned that they should not fall prey to the fallacy of artificial precision. There are times when precise numbers about the capital cost and operating expenses cannot be given, especially at the conceptual stage of a project - which is where the Task Force finds itself. The best that can be done is to illustrate how a funding structure will work if a general estimate of costs is given. That is the case in this instance.

The primary reason for this is that there are simply too many imponderables at this time, including:

1. The State's ability to contribute to the capital investments or operating expenses of the RTV system.
2. To what extent other appropriate revenue sources could become available (such as through the private sector sponsorship of RTV stations, other means of raising private sector revenues, and other appropriate excise taxes, all of which need to be explored).
3. The Planning Board has not developed its recommendations regarding amendments to the Master Plan of Highways and Transitways ("MPOH"), and the Council has not acted on those recommendations. These decisions are critical elements of knowing exactly the physical attributes and configuration that corridors will have on the ground. Obviously, the answers to these questions will impact cost. ***The one thing we do know is that in order to have an optimally functioning RTV system we must have***

dedicated lanes – however they are physically configured and however that goal may be accomplished.

4. In every major construction job reliable cost numbers do not exist until designs have reached a substantial enough level of detail to enable the “owner” to shift pricing risk to the “designer and builder.” At this point, the Task Force has had the benefit of preliminary feasibility and conceptual design estimates only, therefore the cost estimates are much less certain than when a great deal of the design work is completed.

The below table is a summary of all of the scenarios set forth in detail in the report, expressing the special district tax for each scenario, and for each category of taxpayer, in 2012 constant dollars.

The Task Force believes that use of design-build/operate-maintain contracting techniques, as well as other more streamlined procurement procedures that are not currently in use, may result in more advantageous pricing and more expeditious planning, engineering, construction and completion of the project. However, because no decision has been made to utilize alternative procurement techniques (such as the design-build/operate-maintain techniques), it is impossible to make assumptions about time and cost savings that might be achieved through the use of those techniques.

At a Glance Full System Scenario Results									
Scenario	Brief Description	Residential Tax (Within 1/2 mile of Corridors) Average in 2012 Constant Dollars*	Residential Tax (Beyond 1/2 mile of Corridors) Average in 2012 Constant Dollars*	Maximum Residential in 2012 Constant Dollars	First Year in Which Maximum Residential Occurs	Commercial Tax (Within 1/2 mile of Corridors) Average in 2012 Constant Dollars**	Commercial Tax (Beyond 1/2 mile of Corridors) Average in 2012 Constant Dollars**	Maximum Commercial in 2012 Constant Dollars	Year in Which Maximum Commercial Occurs
Scenario A	Capital: Comm w/in 1/2 mile STD Oper: All properties 90% STD Some State/County Contribution 9 yr "Base Implementation"	\$ 232.73	same as 1/2 mile	\$ 320.00	2020	\$ 1,294.32	\$ 290.91	\$ 2,175.00	2022
Scenario B	Capital: Comm w/in >1/2 mile STD Oper: All properties 90% STD Some State/County Contribution 9 yr "Base Implementation"	\$ 330.91	same as 1/2 mile	\$ 440.00	2020	\$ 752.27	\$ 413.64	\$ 1,525.00	2022
Scenario B1	Capital: Comm w/in >1/2 mile STD plus all Residential 90% STD Oper: All properties 90% STD NO State/County Contribution 9 yr "Base Implementation"	\$ 336.36	same as 1/2 mile	\$ 440.00	2020	\$ 1,175.00	\$ 420.45	\$ 2,150.00	2022
Scenario C	Capital: Comm w/in >1/2 mile STD Oper: All properties 90% STD Some State/County Contribution 20 yr "Extended Implementation"	\$ 252.73	same as 1/2 mile	\$ 360.00	2028	\$ 357.95	\$ 315.91	\$ 625.00	2026
Scenario C1	Capital: Comm w/in >1/2 mile STD Oper: All properties 90% STD NO State Contribution 20 yr "Extended Implementation"	\$ 269.09	same as 1/2 mile	\$ 360.00	2028	\$ 707.95	\$ 336.36	\$ 1,175.00	2026
Scenario D	Capital: All properties 90% STD Oper: All properties 90% STD Some State/County Contribution 9 yr "Base Implementation"	\$ 385.45	same as 1/2 mile	\$ 580.00	2022	\$ 481.82	same as 1/2 mile	\$ 725.00	2022
Scenario D1	Capital: All properties 90% STD Oper: All properties 90% STD Some State/County Contribution 20 yr "Extended Implementation"	\$ 260.91	same as 1/2 mile	\$ 400.00	2028	\$ 326.14	same as 1/2 mile	\$ 500.00	2028
Scenario D-A2	Capital: All properties 90% STD Oper: All properties 90% STD Some Unique State/Co Contrib 9 yr "Base Implementation"	\$ 344.55	same as 1/2 mile	\$ 500.00	2022	\$ 430.68	same as 1/2 mile	\$ 625.00	2022
Scenario D1-A2	Capital: All properties 90% STD Oper: All properties 90% STD Some Unique State/Co Contrib 20 yr "Extended Implementation"	\$ 247.27	same as 1/2 mile	\$ 340.00	2028	\$ 309.09	same as 1/2 mile	\$ 425.00	2028
Scenario F	Capital: All properties 90% STD Oper: All pptides 100% STD NO State Contribution 20 yr "Extended Implementation"	\$ 310.91	same as 1/2 mile	\$ 420.00	2026	\$ 388.64	same as 1/2 mile	\$ 525.00	2026

Alternative Plan of Implementation: Phase One Only.

While the Task Force supports completion of the full RTV network, the Financial Plan contained in Part VI of the report also presents an option for the County Executive and Council: to implement Phase One of the RTV system as the Task Force has defined it, plus the entire CCT, at the outset. This would afford the County the opportunity to evaluate the benefits of the RTV system as built, before adopting a plan for the entirety of the RTV system. This would allow decision-makers to give fuller consideration to the extent to which the State will be able to contribute to funding of the balance of the RTV system in the future, when the State has had an opportunity to resolve issues relating to the restoration of the State's Transportation Trust Fund. In the event that decision-makers select this alternative, the adjusted Phase One of the RTV network would include a total of 83.8 linear miles in seven corridors, of which 60.9 miles would involve new construction¹. Based on the same capital cost estimates prepared for the entire RTV system, the Task Force estimates that the total cost of Phase One of the RTV system in base year dollars would be approximately \$1.226 billion, including approximately \$1.071 billion in direct development costs and \$154.5 million in indirect costs that will benefit the entire network but that must be incurred during development of Phase One.

With regard to the financing of those costs, the same financial structure proposed for the entire system is recommended for the development of Phase One. Capital costs would primarily be financed through the use of debt, the debt service on which would be paid by a combination of a State contribution relating to the CCT portion of the development, with the balance of costs paid by local revenues derived through a special taxing district tax. It must be clearly understood that while both Stage 1 of the CCT (9.1 miles) and Stage 2 of the CCT (5.9 miles) have been included in this alternative scope and financial plan, the actual development of Stage 2 of the CCT is subject to the availability of funds when planning and construction thereof is required to commence in the phasing of the alternative scope described herein. The Task Force also recommends that during any transitional period there be a redeployment of existing resources to provide enhanced express transit services to Germantown and Clarksburg until such time as other RTV corridors (including Stage 2 of the CCT, for example) are completed. It

¹ These corridors would include the ICC (the only corridor not involving new construction), Randolph Road, Md. 355-South, Route 29-Colesville Road, Georgia Avenue, Viers Mill Road, and the CCT. In addition to the first 9.1 miles of the CCT, this approach would also include construction of the 5.9 mile second stage of the CCT toward the end of the development period.

should also be noted that if there is any delay in construction of Stage 2 of the CCT, costs attributable to that stage will be deducted from the total capital cost. It is proposed that, in such a circumstance, the geographic scope of the special taxing district would be comprised of properties having 90% of the real property tax base of the County, both for capital and operating cost purposes. Assuming the State contribution as described above, this would mean that the uniform tax rate for all special taxing district taxpayers would reach a maximum of \$0.073 per \$100 of assessed valuation in 2022, and that the maximum tax bill for a typical residence of \$400,000 in assessed valuation would be **\$290.00** in 2022. The tax rate for a typical commercial property valued at \$250 per square foot would be **\$0.18** per \$100 of assessed valuation in 2022, and the typical tax bill for a 2,000 square foot commercial property would reach a maximum of **\$362.50** in 2022. The foregoing tax bills are stated in 2012 constant dollars.

The Task Force believes the County must move ahead to begin implementation of an RTV system. There may not be a complete picture today of exactly how much it will cost, or how it will be funded; however, the County must work to preserve its ability to implement the project in the overriding interest of the community. An investment of reasonable size now will afford the County time to work out the details of how to move forward – and will position the County to be able to implement the funding structure and approach that the Task Force proposes.

While a balanced overall approach to addressing our transportation needs is required, including but not limited to investment in road maintenance and construction as appropriate, alleviation of congestion problems, and improvement of environmental health and our quality of life requires that our community increase the capacity of existing transportation assets within the given physical limitations that we face.

This Report and the Recommendations contained herein contemplate the creation of a people-moving capacity asset as described more fully in the Report. The Task Force refers to it as an RTV network or system, with RTV standing for a sophisticated, surface level rapid transit vehicle system. These systems are frequently referred to as bus rapid transit (“BRT”) systems. However, the Task Force has deliberately elected to refer to it as an RTV system because the nature, appearance and performance of the system will be qualitatively different from what is typical of BRT systems in the United States or abroad, which do not offer transformative qualities to be considered transportation solutions of choice.

As the Recommendations contained in this Report are considered and discussed, the Task Force hopes that the general public and policy-makers will understand that while adoption of the RTV system we propose is advisable to help alleviate existing problems, it is even more essential to create future opportunities and avoid extraordinary future problems. These include intolerable congestion and the County's compromised ability to chart its own destiny in terms of the implementation of adopted land use policies, and the economic climate the County wants to create.

During its deliberations the Task Force has become aware of certain concerns about what the Task Force is proposing – and those concerns must be addressed directly. The concerns include those who prefer to see our County remain a relatively idyllic suburban community, as they believe it has been. To people holding this view, the development of a rapid transit network unleashes too much growth and development and fundamentally changes the community in which we live. Leaving to the side that the suburban place of earlier generations of Montgomery County residents has already fundamentally changed, we must also face the fact that not implementing the County's already existing growth policies will not prevent some growth from taking place and will without doubt result in increasing traffic congestion – without the attendant benefit of a vibrant and balanced economy and the tax revenues needed to maintain our services and quality of life.

There are also those who are worried about what will happen to our road system if we repurpose lanes or take more property to enable the County to build the rapid transit system being proposed by the Task Force. This concern again gives evidence of the underlying and persistent belief that by refusing to make certain changes in our transportation policies (and by continuing to treat automobiles in the same way we have for the last 60 years) we can prevent the exacerbation of our traffic congestion problems. The truth is, there are limits to how much real estate we can devote to our road system – and we must figure out how to more efficiently use that scarce resource. Often, the best way to increase capacity is to shift more people to transit.

There are also those who have raised questions about what a system with lanes dedicated to a rapid transit system will do to the technical functioning of road ways, including how vehicles will make various kinds of turns and how the safety of pedestrians will be assured. While these are issues that must be addressed, such

questions relate to specific design solutions about a myriad of specific locations. They are reasons to plan and design carefully, but not reasons to decline to build the system. Other jurisdictions have found ways, some conventional and some innovative, to address these concerns. So can Montgomery County.

Finally, there are and will be those who are concerned about the cost of the system, how the County will pay for it; who will pay for it; and whether it is prudent to make such an investment in a time of unique stress on public sector and family budgets. The Task Force has taken these questions very seriously. However, it is obvious that meaningful solutions to a serious problem that has vexed our community for more than a generation will not be solved without a significant investment. The word “investment” is thrown around too frequently in describing some kinds of expenditures. In this case, the concept applies. We will be investing in the future strength of our community.

Notwithstanding all of the foregoing, the question we should be asking is: **“what will happen if we do nothing different – and simply cling to our current approaches in the hope that things will turn out alright?”**

**REPORT AND RECOMMENDATIONS OF
THE COUNTY EXECUTIVE'S TRANSIT TASK FORCE**

REPORT AND RECOMMENDATIONS OF THE TRANSIT TASK FORCE

I. THE CHALLENGES

A. Central Role of Transportation

The most important functions of government include, but are not limited to: education and library services, transportation, public safety, health-related services, affordable housing, parks and recreation, environmental protection, and other services.

Continued high quality delivery and performance in all of these areas of service is dependent on a stable and prosperous tax base and a high quality employment base. This requires a level of balanced, sustainable, economic growth.

Transportation is a foundational element in government's and the private sector's ability to achieve their goals in other areas of activity, including access to employees, delivery of goods and services, access to markets and key regional economic centers, public safety services, shopping, recreational, educational and cultural activities, and every other realm of economic activity and human interaction. All require access and mobility in the County and throughout the region.

The fact is that, with the exception of toll roads, creating and operating transportation assets does not present a profitable business model. The large necessary investments in transportation infrastructure are thus left to the people through their government. This is particularly true in the case of transit assets.

Thus, investment in transit must be undertaken by government to enable any suburban/urban community to meet its most basic needs of moving people and commerce. These activities may not be scintillating in their interest to the average person or business – but they are vital to them. Providing needed transportation infrastructure creates better mobility and allows for more rational and sustainable economic growth. In turn, this leads to a stable and strong tax base which, in turn, creates the resources to enable a community, through its government, to perform the most important functions and services required by the community. Failure to make these necessary investments undermines our productivity, economic competitiveness,

environment, safety and quality of life. This is the inexorable logic of why creating adequate transportation capacity must be a high priority in any community.

As will be discussed throughout this Report, Montgomery County has officially recognized the need for increasing transit assets for almost half a century. We have simply not implemented those adopted policies to increase transit capabilities – and the County is now playing “catch-up.” While creating transit capacity is not the end being pursued, it is a critical means to that end: creating and preserving a community with a very high quality of life.

B. Current Conditions: A Dubious Distinction

For the 20-year period between 2010 and 2030, the Washington Primary Metropolitan Statistical Area (“WPMSA”)² is forecasted to experience an employment growth of approximately 1.05 million net new jobs³. Montgomery County’s share of that projected employment growth during those same years is projected to be approximately 163,000 net new jobs (representing approximately 15.5% of all job growth projected for the WPMSA⁴, as shown in the chart below).

Table 1:

NET NEW JOBS BY SUB-STATE REGION 2010-2030		
Jurisdiction	Net New Jobs	Percent Change
District of Columbia	152,130	20.8%
Suburban Maryland <i>Montgomery County</i>	316,525 <i>163,008</i>	32.9% <i>34.5%</i>
Northern Virginia	578,480	54.9%
WASHINGTON REGION	1,053,855	38.2%

Source: IHS Global Insight, GMU Center for Regional Analysis (2012)

² The Maryland jurisdictions within the officially defined area of the “Washington Primary Metropolitan Statistical Area” are: Frederick County, Montgomery County, Prince George’s County, Charles County and Calvert County. Source: U.S. Census Bureau

³ Source: IHS Global Insight, Bureau of Economic Analysis, George Mason University Center for Regional Analysis (Lisa A. Sturtevant, PhD and Stephen S. Fuller, PhD, *Housing the Region’s Future Workforce: Policy Challenges for Local Jurisdictions*, Final Report (October 25, 2011).

⁴ *Ibid.*

Today, the WPMSA already suffers from the most congested roads in the country⁵. More than any other Metropolitan region in the country, the Washington area's average one-way commute times by automobile - either in single-occupancy vehicles ("SOVs") or in carpools - is the longest, at more than 30 minutes⁶. Compared to the District of Columbia, Arlington, Alexandria, Fairfax County, and Loudoun County, Montgomery County holds the unfortunate distinction of having the longest commuting times, at over 31 minutes *one-way*⁷ (or over one hour round trip to and from home). Among all the Washington Area jurisdictions around the Capital Beltway, only Prince George's County has a longer one-way average commute time, at 34 minutes⁸.

C. Current Trajectory

Prospectively, during the 20-year period between 2010 and 2030, the National Capital Region Transportation Planning Board ("TPB") projects the region to add to the already worst congestion in the Nation yet another 3.9 million daily vehicular trips, another 25 million vehicle miles traveled ("VMT") daily, and another 250,000 daily transit trips.

Even more daunting, if the current trends of exurban/rural sprawl around the WPMSA were to continue, today's estimated approximately 230,000⁹ daily work trips from outside the WPMSA into and through the WPMSA (i.e., the pass-through traffic funneled through the WPMSA) is projected to more than triple to approximately 700,000 by the year 2030¹⁰. Although the Center for Regional Analysis did not specifically allocate the number of pass-through commuting trips among the

⁵ Source: Texas Transportation Institute, The Texas A&M University System (David Schrack, Tim Lomax, Bill Eisele), *TTI's 2001 Urban Mobility Report* (2011).

⁶ Source: U.S. Census Bureau, 2009 American Community Survey 1-Year Estimates (which includes only workers who do not work from home.)

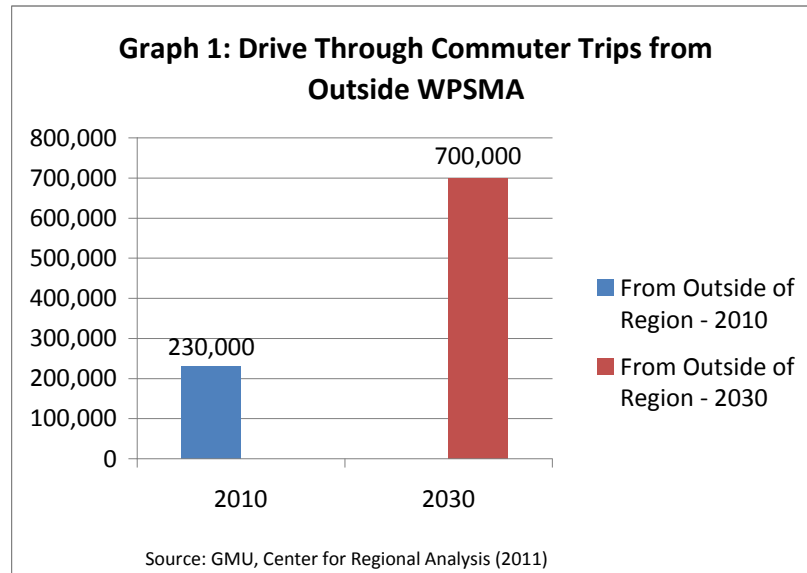
⁷ Source: 2009 American Community Survey 1-Year Estimates (which includes only Washington area jurisdictions with a population in excess of 65,000)

⁸ *Ibid.*

⁹ This statistic of 230,000 daily trips originating outside the region was calculated for 2010. Source: George Mason University Center for Regional Analysis (Lisa A. Sturtevant, PhD and Stephen S. Fuller, PhD, *Housing the Region's Future Workforce: Policy Challenges for Local Jurisdictions*, Final Report (October 25, 2011).

¹⁰ *Ibid.*

WPMSA jurisdictions, all indications would support the inference that the “Beltway jurisdictions” (including Montgomery County) would be burdened by at least their proportionate share of these additional pass-through (jurisdiction-to-jurisdiction) trips, just as has been the case for the past 20 years. Indeed, that is among the reasons why Montgomery County’s 2009 surveyed commute times was worse than all other Beltway-surrounding jurisdictions, except for Prince George’s County.



D. Need for Course Correction

Despite already having the Nation’s worst traffic congestion, we simply cannot build adequate additional vehicle lanes alone to accommodate the area’s projected traffic growth over the next 20 years. With approximately 75% of commuters traveling alone in SOVs, and another 10% of commuters traveling in carpools, such an automobile-dependent commuting pattern is unsustainable. Absent a dramatic and transformational change to our commuting patterns and our efforts to build people-moving capacity, by the year 2030, the Washington Metropolitan Area’s commuting times will likely increase dramatically to the point of bringing our area to a stand-still. And the “inside the Beltway” jurisdictions (including Montgomery County) will suffer more than others. Furthermore, none of this analysis even begins to address the traffic congestion consequences after 2030. Indeed, without dramatically changing our trajectory, Montgomery County’s ability to remain vibrant, and to expand the job opportunities and tax base essential to support quality-of-life beyond 2030 would be compromised, and those more problematic conditions may arrive even sooner, if we do not commence bold and transformational change immediately.

Because of our inability to add a sufficient number of automobile lanes to meet the future demands for people-moving capacity through the use of that resource alone - coupled with the severe economic, environmental, and quality-of-life consequences that would result from our failure to meet those future people-moving demands - the single most important effort we could undertake today is to adopt measures that will begin the process of planning, designing and constructing a project that will materially increase our people-moving capacity in the most cost-effective, efficient and timely way possible. **For the reasons more fully set forth in this Report, the Task Force urges that its proposed rapid transit vehicle (“RTV”) system be designed and built as promptly as possible - and become part of Montgomery County’s complete integrated transportation network.**

E. Need for Increased Capacity to Move People and Commerce

Before discussing the subject of the diminishing people-moving capacity of automobile lanes and how best to overcome that problem, it needs to be emphasized that this Section of the Report is dealing with the problem of limited road capacity – and how to make better use of that limited capacity through implementation of the RTV system as a method of increasing road capacity. It must be understood that this analysis is not forecasting the level of use of RTV that will be achieved. Rather, it simply describes the serious problem that has led to congestion on our major roads. Section II (A) below makes the mathematical case for the potential of RTV, and, among other things, establishes the mathematical “break-even” point at which the repurposing of an automobile lane is justified.

Traffic analysis leads to the conclusion that a certain number of vehicles can physically pass through an intersection within a given period of time. The actual degree of this limitation differs from road to road, place to place, and from time to time, given a variety of factors, including how much traffic enters a corridor from an intersecting road. This fact places a physical constraint on the capacity of a lane of traffic and, consequently, of a given road, to move vehicles and the people who occupy those vehicles. Stated very simply, this is why lanes have been added to roadways over the years to increase the capacity to move vehicles and people. One of the problems is that the performance of roadway capacity is primarily evaluated in the context of peak period traffic on roads. Stated another way, we have tried to find solutions for the highest periods of congestion. Over time, as our community has matured and properties along

our road corridors have been developed, the taking of more real estate for road rights-of-way has become more and more problematic. This means that, increasingly, we must find more efficient ways to use existing roadway resources. (While it is possible to take additional properties for road expansion in certain areas, planning professionals have indicated concerns about such takings because rights-of-way could become too wide and incompatible with livability, safety and other goals.)

The dilemma is that the vast majority of movement throughout our community takes place in single occupancy vehicles. This is not simply a matter of habit. It is also a result of the fact that most people believe that using a single occupancy vehicle is the best way to get around in our current environment of land use and the dictates of our day-to-day lives. However, these historic preferences and attitudes run headlong into the problem that existing road capacity is and will be inadequate to meet the needs of an expanding population and employment base (leaving aside whether such capacity is adequate to our current conditions), and as we have indicated, simply not changing how the County approaches this problem will not mean that the problem will not get worse. Land use plans have and will continue to try to address this issue by creating communities that can more readily utilize transit modes for access and mobility. However, such land use decisions will not actually address any problems if we do not create the transit assets that make a real solution possible.

This should not be seen as a competition between the automobile and transit. Rather, it is an effort to best allocate and utilize scarce resources – now and in the future. Use of the automobile cannot and will not be eliminated. There are some activities that require the use of automobiles – and the movement of commerce generally is not amenable to the use of transit. **However, where mobility admits use of transportation modes other than the automobile, use of those alternative modes needs to be encouraged in order to create greater capacity for those other uses that are not easily adaptable to transit (such as delivery trucks and commercial vehicles).**

F. Reengineering the Sustainable Complete Street

The Task Force unanimously approved its preliminary design recommendations, underscoring that the single most vitally important attribute of a truly rapid and reliable Countywide RTV system would be the provision, to the maximum possible extent, of separate dedicated lanes throughout the entire network, so that the rapid transit vehicles (“RTVs”) would not have to travel

comingled in mixed general traffic (See Appendix A-1). After unanimously agreeing on the priorities of all the designs and attributes of a proposed RTV system for Montgomery County, the Task Force analyzed the various physical constraints and operational challenges that the proposed RTV system might pose, as the limited amount of time and money available to the Task Force would allow. Among the constraints that pose the greatest challenges to the implementation of the recommended RTV system is the set of physical limitations within existing rights-of-way.

The Task Force conducted a thorough evaluation of all the challenges relating to the limitations of the potentially available rights-of-way (including, but not limited to, automobile left-turning movements into neighborhoods, automobile right-turning movements into commercial areas, pedestrian safety, bicycle mobility, on-street parking, business delivery trucks, other forms of transit, landscaping and environmental sensitivities, as well as other considerations).

After a robust discussion about the competing interests and needs of those who use our highway and road network, the Task Force concluded that the notion of a “complete street” requires some expansion when available right-of-way is being allocated among various modes of movement. Indeed, the “complete streets” concept might be recast as a “people-moving capacity, sustainable complete street.” The Task Force recommends that the County consider, to the extent appropriate and financially reasonable, using one effective technique to increase the capacity of our future “people moving, sustainable complete street” through the strategic acquisition of additional land beyond existing rights-of-way. The Task Force acknowledges that in certain constrained areas there may be financial and other practical limitations on the amount of land that could be acquired for this purpose. Nevertheless, the Task Force recommends that among the tools the County should employ to increase people-moving capacity, to be considered on a case-by-case basis, is the strategic acquisition of additional right-of-way.

Ensuring safe and effective use of right-of-way space by automobiles, transit vehicles, pedestrians and bicyclists is essential, and on many occasions these goals of achieving safe integration could be achieved with creative problem-solving techniques (assuming the various differing users work in good faith to find concrete solutions to specific issues that arise in specific circumstances). However, there may be some occasions when each mode may not safely and efficiently use the available right-of-way at the same times, even after exhausting the opportunities to acquire additional right-of-

way. On these occasions, problems must be addressed on a case-by-case basis. For example, it may be necessary to find alternative means to achieve safe use and interaction for pedestrians and bicyclists. While the Task Force recognizes that these interests must be carefully balanced by future detailed planning and engineering efforts, it observes that allocation of the right-of-way resource to the RTV system is not only consistent with a very efficient use of the space for people-moving purposes, it also may be a safer alternative from the standpoint of the use of other modes, such as pedestrians and bicyclists. More structured approaches may be available to moving pedestrians across and over roadway right-of-way, and the same may apply in the case of bicyclists.

Notwithstanding this general proposition that there should be a balancing of these often competing uses in determining (on a case-by-case basis) a proper allocation of the maximum potentially available right-of-way, the Task Force does not recommend that each of these often competing uses be given equal weight within the design and engineering of a “people-moving capacity, sustainable complete street.” To the contrary, given our most urgent imperative to build people-moving capacity to meet the daunting people-moving demands of the present and future, the Task Force recommends that RTV lane use be given preferential weight in arriving at a proper allocation of the available square footage within the maximum potentially available right-of-way. However, this preference for, and weight given to, RTV use within the maximum potentially available right-of-way should not be interpreted as being hostile to the on-going requirement for effective automobile use within such a redesigned and reengineered concept of a “people-moving capacity, sustainable complete street.” To the contrary, the Task Force acknowledges the future demands for moving people and cargo by non-transit means (including passenger vehicles, delivery trucks, and other commercial vehicles). The Task Force does not advocate for the elimination of a large percentage of current automobile lane use. Nonetheless, given the people-moving limitations of an automobile lane in comparison to the potentially expansive people-moving capacity of an RTV lane (as more fully described in Part II (A) below), and given the imperative that we must achieve a substantial reduction in the percentage of SOV commuting behavior if we are ever going to be able to meet future people-moving demands, we must make adjustments to the comparative percentages of right-of-way used for automobiles and that to be dedicated to RTV use.

As with all these case-by-case analyses to balance the uses and needs for space within such a redesigned and reengineered “people-moving capacity, sustainable complete street,” the criteria evaluated should not be absolute or inflexible; but, instead, should be adaptable to the particular conditions which apply. Such a case-by-case evaluation may include an assessment of alternative means to accommodate one or more of the needs or uses, which may need to be compromised in the interests of achieving a properly balanced “people-moving capacity, sustainable complete street.” For example, it may be that due to significant physical constraints within a given portion of the maximum available right-of-way, that it is simply infeasible to accommodate adequate bicycle lane space. But perhaps alternative routing of bicycle lanes could be accommodated at a location other than the particular segment of the “people-moving capacity, sustainable complete street.”

In this regard, the overarching principle applicable to these case-by-case analyses is that we simply cannot have a “one-size-fits-all” approach to designing and engineering our Countywide “people-moving capacity, sustainable complete street.” The success of our people-moving efforts will be dependent upon our ability to develop an extensive catalogue of creative solution strategies that will offer the designers and engineers of our future roadways a vast array of tools to balance all of the often competing needs and uses within our maximum potentially available rights-of-way (including acquisition of additional right-of-way).

A fair set of guiding principles for future transit-oriented development might thus include concepts such as the following: **To achieve desired modal split goals, the general principle might be, at a minimum, one fully dedicated RTV lane for every 4 lanes of other vehicular lanes (to achieve a 20% relative share); and, perhaps, in certain high density locations, one dedicated RTV lane for every 3 vehicular lanes (to achieve a 25% relative share); and perhaps at some point in the future an even higher percentage of lanes dedicated to RTV use, as circumstances warrant.** This guideline must be understood in context. It is more easily achieved than might initially occur to the reader. For example, in an existing six lane roadway, it would be easy to achieve this guideline by having a single reversible lane dedicated to RTV use in the peak direction during peak periods throughout the day.

If we fail to adopt guiding principles such as those set forth above, would not the County be guilty of creating a self-defeating “Catch-22” (because certain future

development land use approvals were conditioned upon achieving a set percentage of multi-modal transit share, but the County creates the obstacle to allow the needed infrastructure to be constructed to actually achieve those multi-modal transit goals)? Would not the County be intellectually-dishonest (at best), if the County gave the appearance of allowing certain development to proceed on condition of achieving a set transit use goal, only to later prevent the best means to actually achieve those goals?

Moreover, the allocation of square footage within potentially available rights-of-way should not be determined exclusively on ridership forecasts or automobile projections. The County has other policies and priorities that must be considered in the use of available rights-of-way. For example, ridership numbers are not used to justify handicap-accessibility, or pedestrian mobility, or bicycle lanes. In fact, if ridership numbers were the dispositive factor, then within the square footage of building faces, we likely could not justify sidewalks, handicap ramps, or bicycle lanes. Instead, we seek to strike a balance of all these admittedly competing uses for between-the-building-faces square footage. Furthermore, as discussed elsewhere in this Report, the County's General Plan, as amended, specifically refers to the need to develop transit capacity in order to support land use policies that will create the kind of livable communities that we want to foster.

For the foregoing reasons, we need to redesign and redefine within the County's master planning of roadways and transitways the notion of a "People-Moving, Sustainable Complete Street" substantially as described above.

G. Ridership Metrics

The PB Study relies heavily on ridership forecasts in identifying qualified corridors¹¹. The Task Force has broadened the scope of the corridor network from that originally contained in the PB Study for a variety of reasons, among which is the desire to create connectivity in the County and a "network effect." Moreover, the Task Force's proposed RTV network is entirely new and transformational. No other community in the United States has a system of the magnitude and scope of the proposed RTV system. In addition, those who question whether ridership projections should control whether or not corridors should be built also believe that traditional modeling does not necessarily apply in the case when a transformational comprehensive network is being proposed. Stated

¹¹ In part, this is because ridership forecasts are an important part of the evaluation criteria of the Federal Transit Administration ("FTA") in considering proposals under the "New Starts" and "Small Starts" grant programs.

another way, the Task Force is proposing that the County develop a system that is a “game changer” – that attracts a completely new universe of riders. It is very difficult to assess the prospective ridership of a transformational system when traditional modeling focuses on existing transit ridership as the base for its forecast. The Task Force does not want to be misunderstood. The Task Force is not categorically rejecting the relevance of ridership as one of a range of factors that may be considered when evaluating the merits of developing a system or a specific corridor or segment. However, ridership forecasts should not be afforded disproportionate weight among the various criteria. Other important public policy considerations must also be thoroughly considered and given their appropriate weight, and those considerations may outweigh ridership forecasts. Such additional policy considerations may include, but are not necessarily limited to: land use objectives, economic development objectives, environmental objectives (to reduce greenhouse gas emissions and impervious surfaces related to transportation), redevelopment and revitalization objectives, creating greater connectivity among different parts of the County, and changing directional traffic patterns during peak hours.

Readers should also note that significant economic and social changes are occurring, which also require that we be more circumspect in using ridership forecasts. **Since World War II until just a few years ago, the number of miles driven on our roads and highways annually steadily increased. This phenomenon peaked in 2004, and since that time vehicle miles driven has decreased. By 2011, the average American was driving 6% fewer miles per year than in 2004. This trend has been led by young people. From 2001 to 2009, the average number of vehicle miles traveled by young people (age 16 to 34 years) decreased from 10,300 miles to 7,900 miles per capita, a drop of 23%. From 2001-2009, the number of passenger miles traveled by 16 to 34 year olds on public transit increased by 40%. According to the Federal Transit Administration, from 2000 to 2010, the share of 14 to 34 year olds without a driver’s license increased from 21% to 26%¹².** These statistics support the judgment found in historic planning documents and many recent land use decisions that if the County can create more vibrant and livable communities centered on transit assets as a method of achieving access and mobility, the County will attract and retain a younger

¹² The entire bolded language is derived from a report entitled: “Transportation and the New Generation: Why Young People Are Driving Less and What It Means for Transportation Policy”; Benjamin Davis and Tony Dutzik, Frontier Group; and Phineas Baxandall, U.S. PIRG Education Fund (April 2012).

population. Ridership forecasts based on the performance of existing transit assets and prior social behavior may miss a broad trend toward more use of transit by more people.

Additionally, the Task Force is well aware that several recommended corridors or segments may not have sufficient density or forecasted ridership at this time to support high quality transit using conventional ridership models. The Task Force believes the way to resolve this problem is to build the RTV system while adapting land use plans to permit transit supportive development patterns along RTV routes. This approach – moving forward with transit and allowing for transit supportive land use to fill in the ridership gaps as the system is built out – is embodied in the 1964 General Plan and its refinements, which contemplate growth around transit as the guiding principle for the future of our county. The Planning Board and Council have already adopted land use plans, which are constrained by the need for transit. This policy needs not be revisited. The Task Force simply believes that the County should implement its long held General Plan – and enable the removal of the transit constraints from specific land use plans already approved by actually creating the transit asset. This approach sees increased transit capacity as an intrinsic part of our transportation network and, given the transformational character of such a system on land use, it establishes the presumption that transit oriented development will produce transit ridership on a system-wide basis which achieves or exceeds modal shift goals of the community in the long run.

H. Flaws and Risks of “No Build” Approach

A common, but fundamentally flawed, approach to addressing traffic congestion reasons that no new development should proceed (either through de jure or de facto moratoria) until such time as road infrastructure improvements can be constructed to “catch up” to the level of congestion. In many respects, that has been our policy for the last generation and that policy has contributed to the reality we face today – and the urgent need to address transportation problems in the manner described in this Report. In fact, in many respects, the above formulation of the no new development approach reflects a desire on the part of some that no growth occur at all.

But the reasoning described in the first sentence of the above paragraph is fundamentally flawed, for several reasons.

First, even if existing and future master plans are never brought to fruition, there will be a modest degree of growth in the County and that growth will add to existing

traffic congestion and related issues, with no investment made to improve the congestion problem.

Second, even if Montgomery County does not capture any of the employment growth that forecasts projects many of the people who will occupy those positions will move to other jurisdictions but will still travel through Montgomery County on their way to and from places of employment and residence. This is “travel throughput.” It congests our roads now – and will congest our roads more in the future if we do not attract these employees to Montgomery County. Also importantly, by failing to attract these people to the County, while burdened with the congestion we will not be benefitted by the private and public revenues that are derived by people living and spending money in the County.

Third, the phenomenon of residents retiring in place (even if there are no new jobs) will result in new employees filling an estimated 200,000 jobs in the next two decades. With people retiring in place this will require new housing to accommodate that cohort – and that will increase transportation demand – without the creation of a single “new” job. Thus, as stated above, there will be real growth without planned growth.

The County cannot solve the throughput travel problem without closing off its borders to through traffic generated from surrounding counties (e.g., Frederick, Carroll, Howard, Prince George’s) and other jurisdictions (e.g., VA, WV, PA, DC), which of course we cannot do. In these circumstances Montgomery County could find that it has significantly slowed if not shut down its job growth and the long-term viability of its tax base, and yet the roads in Montgomery County will continue to become more and more congested because of the auto throughput generated from these surrounding counties and jurisdictions. Indeed, such a *de facto* (if not *de jure*) moratoria within Montgomery County effectively exports these jobs and tax base to the surrounding jurisdictions; while the County’s congestion problem is simply further exacerbated by the resulting exurban sprawl. The unintended consequence of this flawed “no growth” approach, therefore, becomes the catalyst to worsening the traffic congestion for Montgomery County, and diminishing Montgomery County’s ability to raise sufficient revenues to fund its basic social services, including quality schools, public safety, and other quality-of-life necessities).

A most unfortunate example of these unintended consequences is the moratorium experience of the Route 29 corridor over the past 15-20 years. Indeed, this area of

Montgomery County has been perhaps the greatest victim of a fundamentally flawed “no growth until the transportation infrastructure catches up” theory.

- 1) Little to no private investment has been made in the Route 29 corridor of Montgomery County during this time, so there has been little to no growth of its tax base that could otherwise have helped revitalize the area. Indeed, **the number of jobs in the past 10 years has actually *DECREASED*¹³**, as this area has become more of a neglected drive-through bypass for Howard and Prince George’s counties.
- 2) Maryland incurred the enormous expense and inconvenience of constructing three overpasses --- at Randolph Road, Briggs Chaney Road, and Route 198 --- which were thought to be part of a strategy to relieve the area’s traffic congestion.
- 3) Howard County became the beneficiary of all the benefits of the easier travel down Route 29 (e.g., from Columbia and the Maple Farm development through to Silver Spring Metro Station and/or to DC). Howard County thus was able to grow its employment, expand its tax base, expand its private investment in Howard County, and promote itself as a more vital place to live, work, and play along the Route 29 corridor, significantly at the expense of Montgomery County’s funnel effect of traffic congestion on Route 29.
- 4) The Montgomery County businesses at Routes 198 and 29 in Burtonsville have been economically decimated by the automobile bypass created as a result of these infrastructure “improvements” (that were intended to make conditions better for Montgomery County).
- 5) And while there has been little to no investment in the Route 29 corridor of the County, and little to no growth in tax base to support County services to the area, traffic has worsened substantially on account of the more freely moving traffic from Howard County. Today **nearly 57,000 of the approximately 63,000 daily morning commuting trips (i.e. 90.4%)¹⁴** on Route 29 South of Burtonsville originate from Howard County (or jurisdictions beyond). Another share was generated from

¹³ Source: WMCOG Round 8.0 Cooperative Forecasting: Employment Forecasts to 2040 by Traffic Analysis Zones (2010).

¹⁴ Source: The Traffic Group, Inc. (2012).

Prince George's County (coming across Route 198). So very little, or any of the added congestion was caused by Montgomery County growth along Route 29.

II. THE CASE FOR THE RTV SYSTEM NOW

A. RTV as an Approach That Will Increase Capacity and Reduce Congestion

There is no doubt that there are physical limits on the capacity of automobile lanes on our roads, particularly during peak periods. There is also no doubt that a lane dedicated to the use of the RTV system has a higher capacity to carry people than an automobile lane.

The central question is when is the dedication of a lane to the use of the RTV system justified? This question becomes more relevant when it is difficult to “take” more property to enable us to create more right-of-way for road expansion (to allow dedication of RTV lanes without any impact on general traffic lanes along our road corridors). Judgments differ on this question, both because of differing interpretations of data, and also because different people have different perceptions of the need, desirability or practicality of transformational change in order to accommodate increased people moving demand.

The first question in our analysis is what should we assume is the traffic flow rate per hour past a specific point in a mixed traffic lane on a typical corridor¹⁵ during peak commuting hours? Different experts answer the question differently.

For the purpose of analyzing this problem, it is appropriate to select a range of traffic flow rates to illustrate a range of solutions. Thus, a range is selected from the low end of 1,200 to a high end of 1,800 VPHPL¹⁶. The first chart below depicts unconstrained flow at 1,800 vehicles per hour, and the second chart depicts flow of 1,200 vehicles per hour on the main arterial.

¹⁵ By “typical corridor” the Task Force means, examples of the corridors or segments selected to be a part of the Task Force’s recommended RTV network, and does not mean freeways, beltways and interstate highways, which must be analyzed differently.

¹⁶ To achieve an average flow rate of 1,800 vehicles per hour, it is necessary for traffic to flow at the rate of one vehicle for every two seconds. It is noteworthy that many state and driver-safety guidelines recommend a safe driving distance of at least three seconds between vehicles in ideal conditions, and four seconds or more in adverse weather or road conditions. Nevertheless, it appears that in Montgomery County some vehicles travel at less than these safe conditions with as little as two seconds between vehicles, hence, the 1,800 vehicles per hour figure. Many states recommend the three second rule for driving safety (e.g., New York, New Jersey, California, Illinois, Minnesota, Wisconsin). See, e.g., Safetyxchnage.org; Driversedguru.com; and Smartmotorist.com.

Figure 1

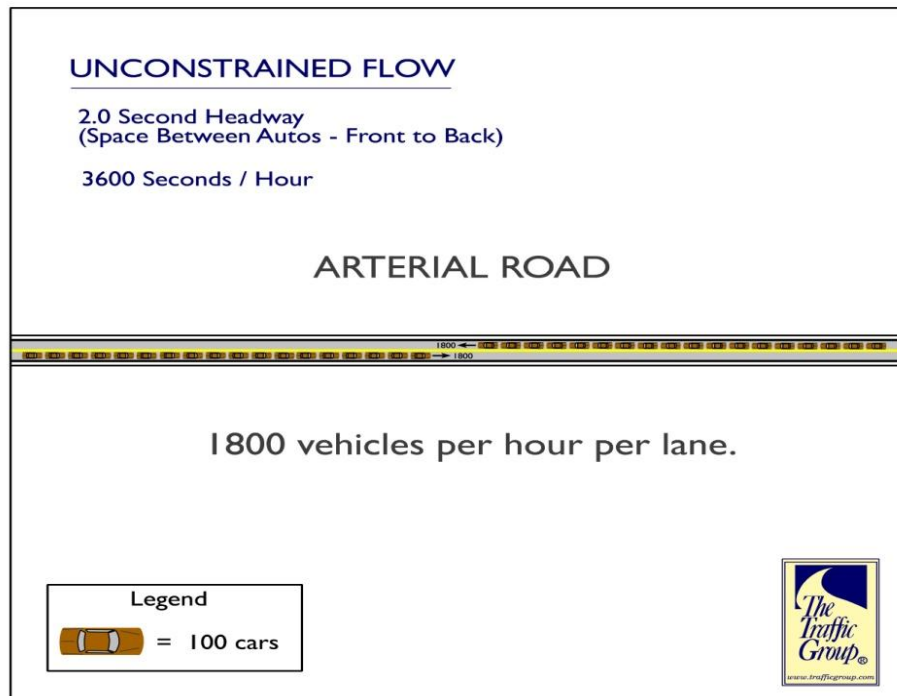
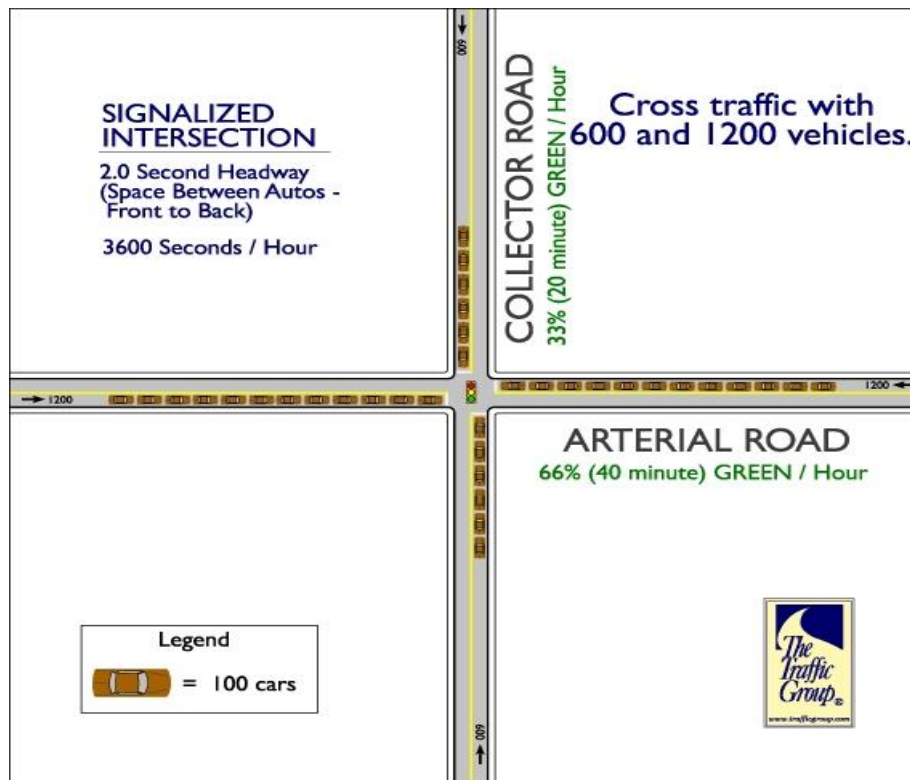


Figure 2



The second question in our analysis is to determine the average number of persons occupying a private vehicle which should be used in our calculations. There is agreement that during peak periods an average of between 1.1 and 1.2 occupants are in such vehicles, and that this average may increase to 1.39 when non-peak periods are taken into account. As a practical matter, while the “all day” figures are of some interest, the areas of most important focus are the peak periods – when the greatest competition for the scarce roadway resource exists – and when the need to alleviate congestion is keenest. This Section will focus on the peak periods, and will apply an average of 1.15 persons per vehicle during peak periods.

Having arrived at these basic assumptions, the methodology used in this Section will be to first determine the number of people moved past a given point during the peak periods of traffic with respect to the hypothetical vehicle volume selected:

1,200 vehicles X 1.15 occupants = 1,380 passengers per hour per lane.

The next step is to determine how this general traffic lane capacity compares with the RTV system’s ability to carry passengers, and the occupancy and frequency of operation that needs to be achieved in order to reach a “break even” point which justifies reconfiguration of the existing roadway lane use.

Given the types of rapid transit vehicles available, a single articulated RTV has a passenger capacity of 140¹⁷.



If we assume solely for the sake of argument that RTV’s will operate at 60% of their capacity, this means that 84 passengers will occupy each RTV. Based on the foregoing, approximately 16 RTVs per hour at 60% occupancy will be required to move

¹⁷ It should be noted that the vehicle shown exists, but is not typically in use in the United States. It reflects the capacity described in the vehicle specifications.

as many people as would be moved in 1,200 private vehicles during the same period. This requires frequency of approximately 1 every 3 minutes 45 seconds.

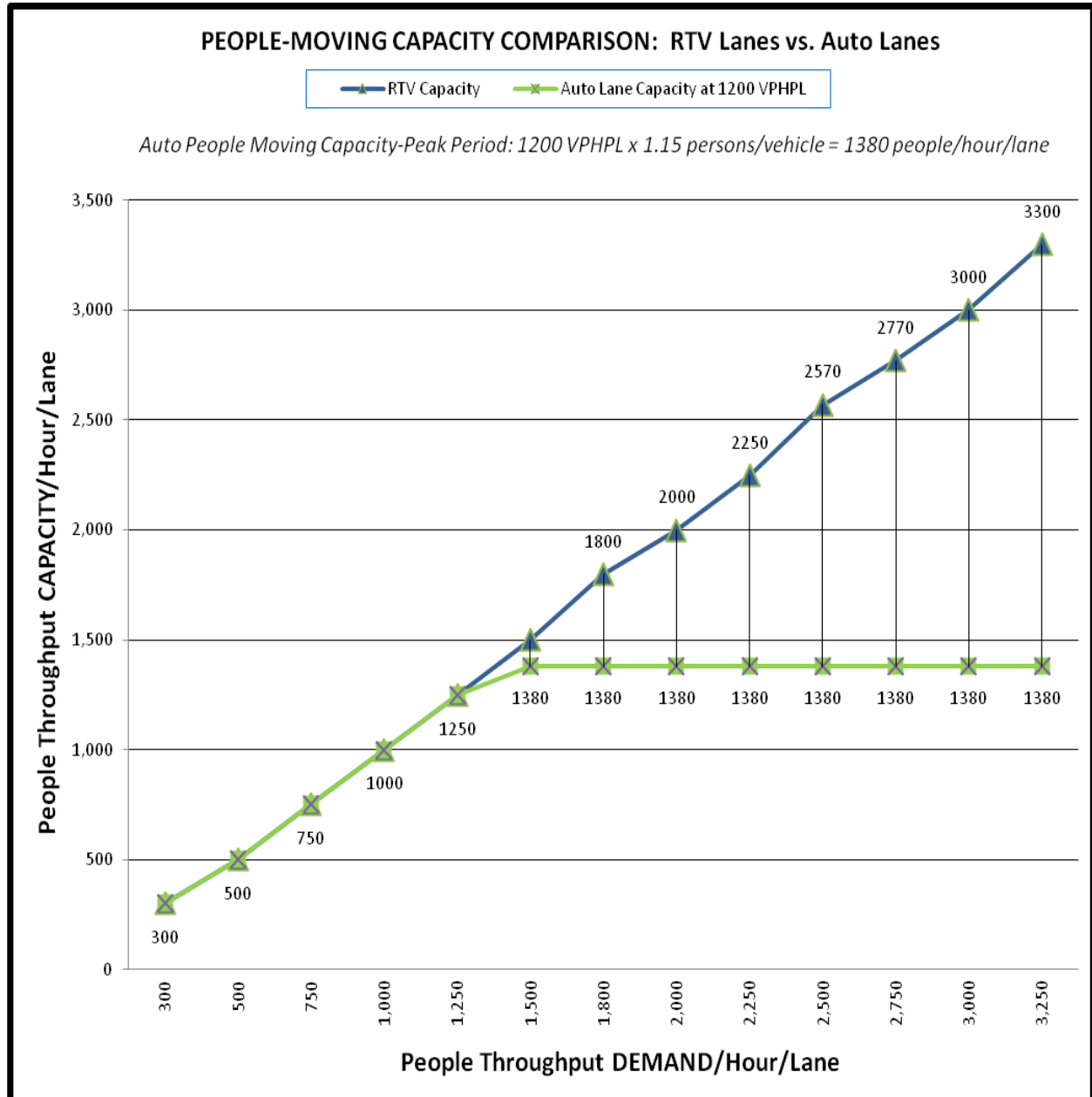
This frequency or headway¹⁸ is easily achievable based on experience in other locales. As a practical matter, and in the real world, to achieve better operating efficiency, the use of RTVs to accommodate a higher number of passengers per hour will operate at higher occupancies and lower frequencies. For example, if RTV demand reached 2,070 passengers per hour, headways would probably be set at frequencies in the range of 20 RTVs per hour (3 minute headways), which would mean RTV occupancies of approximately 74% to be able to accommodate that number of passengers.

It is important to note that as automobile demand increases on our roads there is an upper limit of capacity. It will differ from corridor to corridor; however, that maximum capacity will be substantially less than the capacity of a lane dedicated to the use of RTVs. Stated another way, as automobile demand increases within existing travel lanes on RTV system corridors, efficient flow becomes more problematic. Thus, as RTV use increases the comparative advantage of RTV also increases¹⁹.

¹⁸ The term “headway” is defined as the length of time between rapid transit vehicles on a given route.

¹⁹ For example, if we assume a single articulated RTV with a 140 passenger capacity, and if we further assume the RTVs operate at 90% capacity (126 passengers) at 2 ½ minute headways, the capacity of an RTV system within a single lane along a specific corridor is 3,024 passengers per hour. This is 2.19 times the capacity of one lane of private cars at the low end of the above described range, or 1.46 times the capacity at the high end of the range. If these hypothetical results were to obtain, the impact on the general traffic lanes which remain in the road system would be dramatic and positive. At 2.1 times current auto capacity, and RTV system operating at that level of efficiency could free up the one lane of auto traffic being repositioned **plus** another lane of auto traffic. If the RTV system were to employ double articulated vehicles, the comparative advantage would be even more dramatic. The capacity is extraordinary.

Graph 2



It is a reasonable inference that, if a high quality product is placed in service which affords consumers an attractive alternative to driving their cars; people will adjust to the opportunities and resources available.

Notwithstanding the foregoing, skeptics may say, “that is an interesting analysis” but it does not take into account the fact that we do not know whether actual ridership will support the mathematical analysis regarding how many people will switch from driving their cars to using the RTVs and, therefore, we could have a significant congestion problem caused by dedicating a lane to RTV use before ridership justifies it.

This is a “Catch 22” problem – because if we do not dedicate the lanes and achieve high performance we may be unable to create the transformation transit asset that will attract the riders. What is the answer to this dilemma?

The answer is a profoundly important point that is frequently lost in a discussion of people-moving capacity and congestion. While the movement of people takes place in vehicles, congestion is not a function of people but of occupied space. Stated another way, it is the physical space occupied by cars and other vehicles that has the potential of causing congestion when it cannot move freely through an intersection or other given point. Thus, if we remove some calculable portion of those vehicles from the roadways we can positively impact congestion. Thus, even in those situations (during a transition period to more robust ridership) where an RTV operation within a given corridor does not move as many people as would move through a given point in automobiles, the reduction in the number of vehicles occupying space along that roadway can still make a positive contribution to congestion reduction. The following two charts depict this point about space saved.

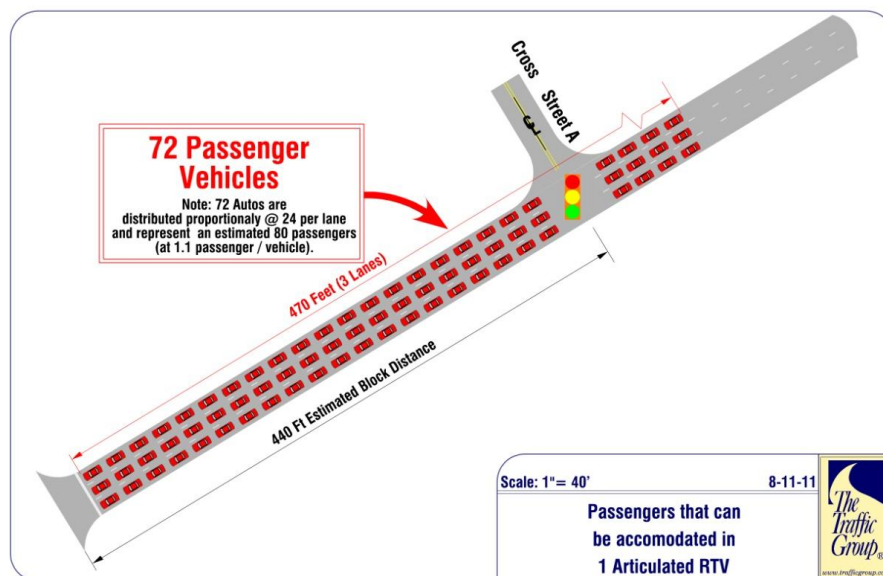
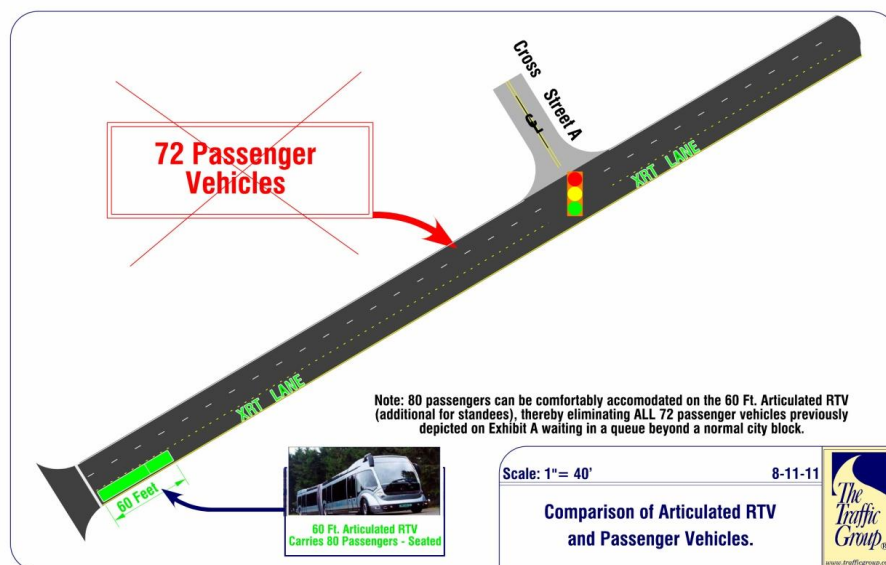


Figure 3

Figure 4



Again, the Task Force is not projecting how many people will actually shift from automobiles to use of RTV. Rather, the Task Force is demonstrating comparative capacities to demonstrate that investment in the RTV system is a sound decision and will create an asset that will allow people who live and work in the County to have an important choice in how to move around the community and region.

B. The Economic Imperative

1. No Growth or Smart Growth: What We Really Need is New Transit Capacity to Foster More Sustainable Economic Growth

Both Montgomery County and the Washington Region have the worst traffic congestion in the United States. The average commuter in this region experiences 74 hours of delay and wastes \$1,495 per year in wasted fuel. Traffic congestion is bad and getting worse. There are often two suggested alternatives to address this worsening congestion in our region: “No Growth” or “Smart Growth.”

The “no growth” alternative was discussed in Part I (H) above and is not a viable option for many reasons. To summarize, looking at the numbers over the next 20 years, the CRA forecasts 163,000 new jobs for Montgomery County alone, independent of job growth in the surrounding Counties. If you assume this Montgomery County job growth, along with a “No Growth” policy for housing and no new transit, and a continuation of the pattern of 36% of in-commuting workers, then 58,680 of these 163,000 new jobs will

be held by workers living outside of Montgomery County commuting into Montgomery County. As 80% of this group use private cars to commute to work, the County could expect approximately 47,000 new private vehicles on the County's already overcrowded roadways resulting from this "No Growth" approach. With more housing units planned for the surrounding Counties, and no new housing or transit within Montgomery County, the "No Growth" approach will only result in more in-commuters and more through commuters, both of which will only add to the congestion on Montgomery County roads. Adding insult to injury, these workers living outside of Montgomery County will use County services without providing property tax revenues to Montgomery County. Therefore, "No Growth" is not the answer to solving Montgomery County's traffic congestion problems.

"Smart Growth," includes more mixed-use, transit-oriented development, centered around or near transit stations, would concentrate more future jobs, along with new housing, in a more compact footprint that is more suited to transit, pedestrian and bicycle travel. However, that transit-oriented smart growth land use plan needs a robust new Countywide transit system to link those areas together, in order to provide maximum effectiveness in improving travel conditions. Montgomery County was an early pioneer in smart growth planning, in part because planners saw that if more county workers could "live where they work" trip lengths would be reduced, pedestrian, bike and other non-auto trip shares would rise, and better designed, more vibrant community centers would emerge. Even in such transit-oriented communities there will still be workers who will not live within walking distance of work, or will live and work in different activity centers, or even work in other jurisdictions in the region, and there will still be non-commuting trips that people will still have to make beyond the areas in which they live. This is why a Countywide transit network, with connections to regional transit facilities, will maximize the effectiveness of the proposed RTV system as an attractive alternative to dependence on SOV use, especially during peak periods.

There are economic benefits in addition to these transportation benefits. As noted above, the captured property tax revenues from being able to accommodate more resident workers in the County would add to the County's total tax base. Revenues from this expanded tax base could support county services in a wide variety of ways. The result would be a sustainable and improved quality of life for Montgomery County residents.

A comparison of what happened to the tax base in Montgomery County over the past decade of relative “No Growth” as compared to Northern Virginia’s significantly more “Pro Growth” approach over the past decade is appropriate. **Between FY 10 and FY 11 Montgomery County experienced a 33% decrease in new construction as a component of its tax base, while the total tax base increased a very modest .5% with a concurrent constraint in funding for schools, police, and other public services from this constrained overall County’s tax base. During the past few years of relative “No Growth,” in the face of declining tax revenues, the Montgomery County Executive and the Montgomery County Council have had only one choice – budget and service cutbacks. Over the past decade Montgomery County lost 6,000 jobs, while adjoining Fairfax County gained 36,000 jobs. During the past year transit intensive Arlington County in Northern Virginia experienced a 6.6% increase in its expanding tax base, including a 1% increase in the new construction component of its tax base.**

Northern Virginia has planned and executed “smart growth” transit oriented land use plans in some areas more than others over the past two decades. Under the most effective of these plans, Arlington and parts of Fairfax County have concentrated high-density mixed-use development around or near Metro mass transit stations, while maintaining the low density suburban character in locations adjacent to these higher density transit oriented centers. The Rosslyn, Clarendon, Ballston corridor is a good example of the implementation of this “smart growth” transit oriented land use planning. Fairfax County is currently building the most significant extension of our region’s mass transit system as it extends Metrorail service to Dulles Airport. The competitive advantage they are poised to gain relative to Montgomery County, unless Montgomery County also moves aggressively forward to expand transit service, can hardly be overstated.

Going back to the General Plan of 1964, Montgomery County has long had a vision for “smart growth” transit oriented development. In both its 1989 Comprehensive Growth Policy Study and in its most recently approved master plans for White Flint, Shady Grove, Great Seneca and Germantown, Montgomery County has adopted “smart growth” visions and “smart growth” transit dependent land use plans for the County.

Montgomery County has had “smart growth” visions and “smart growth” plans since 1964. Having visions and plans is not the question. The question before the

County today is will the County's approved "smart growth" visions and plans be matched by County action to plan, fund and build the underlying mass transit system required to achieve the transit dependent smart growth envisioned in these "smart growth" plans?

The proposed Countywide RTV transit system is the missing piece of Montgomery County's "Smart Growth" puzzle.

The proposed RTV network is needed to provide safe, convenient, affordable, sustainable transportation that will serve existing residents and employees and will enable the County to achieve its current transit oriented "smart growth" land use and growth projections. The RTV system will also provide a long-term sustainable platform for continued growth and development in the County, beyond the current 20 year growth projections.

The choice is clear. Support a "smart growth" RTV transit network along with other planned transportation capacity increasing projects and achieve balanced and sustainable growth in jobs, housing and property values, with an expanded and healthy tax base to pay for schools and other key County services that contribute to the highest quality of life in Montgomery County. Without the RTV system as a key part of this mix, we expect the County will experience greater traffic congestion, constrained or even negative job growth, little investment in new housing and a declining and unsustainable tax base. The Task Force believes the numbers for projected "smart growth" jobs, housing and RTV transit ridership support this conclusion.

2. Planning Ahead: Projected Jobs, Housing and Transit over the Next Two Decades – The "Smart Growth" Alternative

The Council of Governments ("COG") forecasts approximately 1 million new jobs in the Washington Region over the next two decades. Approximately 15.5% or 163,000 of those net new jobs are forecasted for Montgomery County. The Sage Policy Group forecasts that these net new jobs will also be accompanied by an additional 200,000 jobs vacated due to retirement. The 2010 Census data reflects Montgomery County with an aging population, fewer younger people and declining household incomes. This weakening County profile is a result of "No Growth."

A profile of the County's population over the next two decades, assuming "Smart Growth" offers a different and more encouraging future. The net new workers resulting from projected new job growth of 163,000 over the next two decades are projected to be younger, with an estimated weighted average annual household income of \$93,000, with

42% of the new workers employed in the science and health service sectors²⁰. The average income for the science sector jobs is estimated to be \$92,000²¹. These jobs and this healthy younger new population only come with “Smart Growth.”

COG also forecasts approximately 100,000 new housing units for the net new jobs while the Sage Policy Group forecasts an additional 80,000 housing units for the replacement workers filling jobs vacated by retirement. In total, the need for 180,000 housing units is forecasted in Montgomery County over the next two decades, if the County is willing to adopt a “Smart Growth” policy going forward. These new housing units are a prerequisite to attracting and housing the younger, well educated workers in the bioscience and health care future job growth sectors.

The Countywide RTV system is an essential keystone to executing the County’s “Smart Growth” policy over the next two decades. The proposed RTV system will have an estimated daily ridership ranging from 165,000 to 207,000²². With 163,000 projected new job positions and 180,000 new housing units, the proposed RTV system provides an attractive transit alternative both to facilitate and accommodate projected growth, and to avoid a significant increase in new cars and strained traffic congestion on Montgomery County’s already congested roads.

As noted above, the Washington Region and Montgomery County has the worst traffic congestion in the U.S. today. This traffic congestion is the result of several factors including:

- a) Four of Five Montgomery County commuters use private vehicles to commute to work;
- b) 70% of the County commuters drive alone; and
- c) There is no high performance Countywide mass transit system as a feasible alternative to commuting by car.

To achieve “smart growth” and successfully compete for its fair share of the projected job growth in the Region, the County needs to plan, fund, and build a high

²⁰ Report of the Sage Policy Group, Inc., Appendix C-1, Exhibit A-1 on page 65.

²¹ Ibid.

²² These ridership forecasts are contained in the PB Study. That study forecasts ridership within the 16 corridors described in the PB Study. The Task Force has expanded the corridors by including new corridors and segments to achieve greater connectivity. PB Study forecasts are also based primarily on existing, actual Metro Bus and Ride-On bus ridership. While the Task Force has not had the resources to perform studies to support the proposition, the Task Force believes that the proposed RTV system will attract more riders, and a wider universe of riders, than contemplated in the PB forecasts because of greater coverage and Countywide connectivity.

performance rapid transit system, which enables the County to achieve its “smart growth” vision embodied in its General Plan, Comprehensive Growth Policy and approved Master Plans.

The Task Force suggests that the reader consider several recent Montgomery County approved “Smart Growth” Master Plans, and the relationship between jobs, housing and transit in just these four recently approved Master Plans.

As noted above, the Council of Governments (COG) forecasts approximately 1 million new jobs in the Washington Region over the next two decades. Over 15% or 163,000 net new jobs are forecasted for Montgomery County over the next two decades. Approximately half, or 80,000 of these 163,000 projected net new jobs, are located within the following four County approved Master Plans: White Flint, Shady Grove, Great Seneca, and Germantown. Advancing the planned growth in each of these Master Plans is contingent upon providing a new mass transit asset to each of these transit oriented “smart growth” development centers. No mass transit means no growth for 80,000 of those new jobs, over the next 20 years located within these four new Master Plan areas. The new jobs in these master plans include a large number of well paid biotechnology and health care jobs for the younger, highly educated workforce which will be the foundation for the future of Montgomery County. The remaining 80,000 jobs are forecasted to occur in the balance of the County, including locations like the FDA White Oak life science cluster in eastern Montgomery County, in addition to other parts of the County. By connecting new residents to work, the RTV system, as the affordable new comprehensive transit asset for the County, would solve many mobility problems and create major economic benefits for the County.

Employment Growth in the Region will occur over the next 20 years. Whether Montgomery County achieves its share of this projected growth and related economic health to Northern Virginia, and the other surrounding Counties, is contingent in very large part on the County’s decision to support the proposed Countywide RTV mass transit system.

What is clear is that the absence of an RTV mass transit system, that is the “No Growth” approach, will likely result, by default, leading to major congestion and fiscal problems for the County. Worsening congestion acts as a brake on economic growth resulting in the further loss of jobs, housing, commercial space and the associated tax revenues which would move elsewhere in the region in what could become a vicious

cycle. The Task Force believes the alternative vision of sustainable job growth the planned RTV system will help us achieve is a far better option. Beyond the economic benefits related to new jobs, new residents, a younger, well educated new workforce, and an expanded tax base with new revenues, this “Smart Growth” approach incorporating the Countywide RTV system will also divert more private vehicles off the County road network and provide improved travel conditions across all transportation modes.

In conclusion, the choice is clear. **“No Growth” is actually an illusion which equates to greater traffic congestion, a stagnant or declining older and poorer population, with either a reduced quality of life, and either deep service cuts or higher taxes, for County residents. A truly “Smart Growth” alternative, incorporating the Countywide RTV system, equates to reduced traffic congestion, more jobs, a younger well educated new population, and results in an expanded tax base, better travel conditions and an enhanced quality of life for Montgomery County residents.**

C. Creating Vibrant, Livable Communities with a Sense of Place

As discussed above, Montgomery County is nearing the limits of its ability to pave its way out of its traffic problems. But even if we could afford to build the roads necessary to accommodate the levels of demand implied by independent growth forecasts, our quality of life would be seriously impaired by continued reliance on SOVs as the predominant cornerstone of our transportation system. The addition of a high quality transit alternative is about more than adding capacity to move larger numbers of people more quickly. The Task Force envisions the RTV system as an opportunity to reorient land use as well as transportation planning in ways that will improve the livability of our neighborhoods and commercial centers.

Transportation infrastructure has a tremendous impact on the attractiveness of a community as a place to live or work. Too often we have addressed the need for mobility by adding lanes and widening intersections until the movement of large volumes of automobiles at high speeds has become the defining characteristic of entire swaths of our County. The dominance of SOVs creates a vicious cycle in which adding capacity to meet the needs of cars literally and figuratively crowds out space for transit (as well as pedestrians and bicyclists). This in turn leads individuals to conclude that the alternatives to driving are unpleasant and impractical, reinforcing the demand for capacity to serve more cars. The dominance of auto-mobility is also reflected in land use planning, where

opportunities to attract jobs or improve amenities with redevelopment are often blocked by concerns about generation of new car trips.

RTV offers a way out, because transit encourages a pattern of land use that reduces the need to drive. Like heavy rail transit stations, RTV stops and proximity will facilitate mixed use development that offers a variety of services in a central location. Unlike heavy rail, the transit oriented development around RTV stops is likely to be relatively moderate in intensity, helping to preserve the appealing characteristics of surrounding neighborhoods. By encouraging development that reduces the number and distance of auto trips while improving the quality of the public spaces along major transportation corridors, RTV can make the goals of supporting economic development, serving mobility needs, and making our neighborhoods more appealing places mutually reinforcing rather than antagonistic.

Some undoubtedly will argue that the Task Force's vision for the role of transit and land use represents a departure from policies favoring an automobile-oriented pattern of suburban development. The Task Force believes this view represents a misreading of the historical record, which reflects a consensus formed more than 50 years ago in favor of organizing development around transit. As the 1962 introduction to the General Plan argued:

“One of the biggest private costs you pay as a suburbanite is transportation – the second car and the endless chauffeuring of the kids here, there and everywhere. These costs can also be curtailed by compact instead of scattered development, better local bus routes, shorter distances to local community facilities, and the use of rapid transit for major commuting trips.”

Similarly, the 1964 General Plan (the “wedges and corridors” plan), the foundational document in land use and transportation planning in Montgomery County, observed:

“An efficient system of transportation must include mass transit sufficient to meet a major part of the critical rush-hour need. Without rapid transit, highways and parking garages will consume the downtown areas; the advantages of central locations will decrease; the city will become fragmented and unworkable. The mental frustrations of congested highway travel will take its toll, not to mention the extra costs of second cars and soaring insurance rates. In Los Angeles where

an automobile dominated transportation system reigns supreme, there is still a serious commuter problem even though ‘approximately two-thirds of the city’s downtown section is given over to streets and parking and loading facilities.’ There is no future in permitting the Regional District to drift into such a ‘solution.’”

When the “wedges and corridors” plan was amended in 1969, the relationship between transit and land use was articulated more clearly, and the new version of the plan called for “a coordinated rail-bus rapid transit system that is as capable of shaping desirable growth patterns as it is in serving present population and employment centers.” The 1969 refinement also recognized the need to “[f]oster a pattern of land development which reduces auto trip length.”

By the time of the most recent modifications to the General Plan in 1993, the need for greater emphasis on orienting development around transit – and on delivering the transit envisioned by earlier iterations of the wedges and corridors plan – had become obvious. With regard to the area along I-270, Montgomery County’s “corridor” in the “wedges and corridor” scheme, the authors of the 1993 refinement noted, “Its present achievements in fulfilling the vision of the 1964 General Plan and the 1969 General Plan Update have been modest. The corridor is plagued by congestion and poor pedestrian amenities. It is characterized by surface parking lots, strip retail, and sprawling development, instead of densely developed identifiable centers.”

What is the reason for the failure to achieve the General Plan’s vision? “Demand to develop the I-270 corridor came well in advance of the transit stations envisioned in the 1964 General Plan. Consequently, early development was characterized by low-density office parks loosely strung along I-270, with housing located away from the main arteries of travel.” The urban ring, which extends beyond the beltway to White Oak in the eastern part of the county, was likewise unable to fulfill the expectations outlined in the 1964 and 1969 plans in the absence of transit service that could provide both the economic incentive and the organizing logic for redevelopment.

The Task Force believes that an RTV system is essential to fulfilling the vision for land use as well as transportation that was spelled out in 1964 and elaborated in later refinements to the General Plan. In fact, a high quality transit network matched with transit supportive mixed uses and density is not only consistent with but required by the “wedges and corridors” plan.

D. Environmental Benefits

New public transit systems which are consciously designed to improve the riding experience of users have shown that they can lure people out of cars and onto transit. Key features that contribute to a better rider experience are more frequent service, stylish and comfortable vehicles, improved travel times and well-designed stations. If successful in attracting sufficient numbers of new riders, such an expansion of the transit system can lead to a net reduction in greenhouse gas emissions and encourage mixed use, denser development around stations and along transit routes instead of less dense development in outlying “greenfield” areas.

The RTV system proposed by the Transit Task Force incorporates many of these key features and it is expected to attract new transit riders. Of the 165,000 to 207,000 daily boardings in 2040 projected by Parsons Brinckerhoff in its July 2011 *Countywide Bus Rapid Transit Study*, approximately 25% of them will be made by new transit riders if Montgomery County’s experience mirrors that of existing bus rapid transit systems in Vancouver, Canada; Las Vegas, Nevada and Oakland, California. This will reduce the number of miles driven by cars in the County that otherwise would have occurred if these new transit riders had continued to drive rather than ride the RTV.

This shift from private passenger vehicles to public transit will result in lower overall carbon dioxide emissions. The fleet of RTVs proposed for the entire RTV network is projected to travel a total of 48,257 miles a day²³ or 17.6 million miles a year in 2040. One option considered by the Task Force was a fleet of hybrid-diesel vehicles. Hybrid-diesel vehicles (40-feet in length) emit approximately 4.4 pounds of carbon dioxide per mile and the longer (60-foot), articulated hybrid-diesel buses emit from 5.7 to 8.3 pounds of carbon dioxide per mile.²⁴ Thus, the entire fleet of hybrid-diesel RTVs would emit between 40,000 and 73,000 tons of carbon dioxide annually and the 25% share of this attributable to new transit riders would be between 10,000 and 18,000 tons²⁵.

²³ Value of “Daily Vehicle Revenue Miles” found in Parsons Brinckerhoff, *Countywide Bus Rapid Transit Study*, July 2011, p. 33.

²⁴ National Renewable Energy Laboratory, *King County Metro Transit Hybrid Articulated Buses: Final Evaluation Results*, Dec. 2006. http://www1.eere.energy.gov/vehiclesandfuels/avta/pdfs/heavy/king_co_final_12-06.pdf

²⁵ Working Group A of the Task Force also considered the use of fuel cell technology vehicles in RTVs. This option would reduce carbon-dioxide emissions and noise; however, it is much more expensive. It is hoped that as demand for such vehicles grows the price will come into line with the cost of the hybrid vehicles discussed above.

Sage estimates that between 107 and 139 million miles of vehicle travel will be avoided annually because new transit riders would leave their cars at home for at least some of their trips. At current levels of vehicle fuel efficiency, this translates to 44,000 to 57,000 tons of avoided carbon dioxide emissions annually. However, this would drop to about half of that by 2040 (to 24,000 to 32,000 tons of avoided emissions) after federal fuel efficiency standards are nearly doubled over the next 13 years. **As a result, net carbon dioxide reductions because of drivers switching from their cars to the RTV system would be approximately 14,000 tons a year (the 24,000-32,000 tons of avoided emissions offset by the 10,000-18,000 tons of additional carbon emissions attributable to the new RTV riders).**

One note of caution concerns the particulate matter emitted by diesel engines. Exposure to particulate matter poses serious health risks including aggravated asthma, lung damage and other serious health problems. Diesel exhaust also contributes to haze and ozone formation. Because of this, if diesel-hybrid vehicles are selected for the RTV system, they should be equipped with diesel particulate matter filters that reduce these emissions by 60 to 90 percent. In addition, cleaner vehicle technology (such as fuel cell powered vehicles) should be adopted as it becomes available.

Transit oriented development (TOD) has several potential environmental benefits that can be realized if the transit system is designed in a way that attracts substantial ridership, and land use planning encourages development around stations and along transit corridors. TOD, at its best, is characterized by housing, retail and commercial buildings in close proximity, often in the same building. A grid of streets, sidewalks and bike trails encourages and supports walking and bicycling as an alternative to short trips by car. Finally, by concentrating development around stations and transit corridors, TOD permits a region to accommodate population and job growth while preserving open space and natural habitat. This results in lower greenhouse gas emissions (because of fewer short car trips) and the preservation of natural carbon sinks (forests and vegetated open spaces)—critical components in addressing climate change.

Some may question whether a rapid transit system that utilizes RTVs will encourage developers to take on the risks of investing in projects at stations and along the transit corridors. Several case studies have shown that the permanence of tracks in the ground—a light rail system—is a factor that encourages TOD. However, it is unclear whether bus rapid transit systems have a similar positive impact on development. In part,

this is because the term “bus rapid transit” is applied to everything from buses running in mixed traffic with minimal investment in new stations and other infrastructure, to a system that uses stylish vehicles which run in dedicated lanes or guideways and stop at well-designed stations.

It seems reasonable to assume that when a bus rapid transit system invests in several key features of a light rail system (attractive stations and vehicles, dedicated lanes, pre-boarding fare collection and frequent service), it will have a similar impact on attracting riders and encouraging commercial development around stations and transit corridors. This requires higher capital spending when compared to a “bare-bones” rapid transit system, but these higher initial costs are offset by higher ridership (with an increase in fares collected) and by an expanded tax base as TOD occurs.

E. Serving Major Corridors, Creating Connections and a Network Effect

Fundamentally, we need to serve our major corridors because in most instances they represent the highest degree of traffic congestion today and, if left unimproved, such congestion will only increase in the future to a level of intolerability. The source of much of our congestion comes from travel within the County. However, a great deal of it comes from outside the County (e.g., Frederick, Prince George’s, Howard counties). Much of it runs in a “peak flow” direction. In the morning it is heavy heading toward the District of Columbia (the “District”); in the afternoon it is heavy leaving from the District. Today many of these “peak flow” corridors are north-south corridors. However, a true network must also provide east-west mobility and connectivity. The RTV system anticipates that County routes should be ready to extend to other jurisdictions (e.g., Prince George’s County and the District of Columbia) when, and if, they are ready to adopt similar measures in the future. Then transit riders will be able to move seamlessly across jurisdictional boundaries.

Montgomery County has little opportunity to add additional roadway capacity, especially in the denser, more urban areas. Therefore, the RTV network will focus on major roads as corridors and provide connecting corridors to create a network that provides movement to and from major Activity Centers. Activity Centers are major employment centers or “mixed-use” centers (a dense mix of retail, employment, and residential activity or significant levels of employment and housing) accessible by transit or commuter rail and by major highways. In addition, Activity Centers should be supportive of walking, biking and neighborhood interaction. Transit and land-use in

these Activity Centers should be highly correlated. By focusing on major road corridors, the County can use transit as a way of directing future smart growth and development along (extended) corridors. Further, while the RTV system will facilitate rush hour commutes, most of the day is *not* rush hour. For the rest of the day the RTV system will be there to help people travel to school, to shops, to activities and to entertainment.

The RTV system will not only connect existing Activity Centers, but for several Master Plan areas (White Flint, Greater Seneca Science Corridor, White Oak) RTV will be the key to “unlocking” the staging of the Master Plan, which requires transit to be in place. For people moving into a new area, if transit already exists they will have the option to factor transit into their travel plans, rather than needing to rely on driving on the roads.

For areas “starved” for transit, like Clarksburg, the RTV network will provide a new mode of travel. It will also provide transit for areas, like the Great Seneca Science Corridor, that are being held back from development until proper transit is in place. And if the Corridor Cities Transitway (CCT) is approved by the Governor as bus rapid transit system (BRT), it can be folded into the RTV system (the Transit Task Force has made that assumption in this Report).

The RTV system will play a role in connecting the County’s three major biotech centers: National Institutes of Health, the Great Seneca Science Corridor (“GSSC”), and the FDA center at White Oak. The route from NIH to GSSC will be the Red Line plus CCT. And the fastest route between NIH and the FDA at White Oak will be the Purple Line plus the RTV along New Hampshire Avenue or US-29. The RTV system connects to all of these lines – Red, Purple and CCT. Further, not only will County residents be able to travel quickly between the centers, but students at the University of Maryland may gain new access (via the Purple Line and RTV system) to these biotech centers for internships and other research.

In addition, while analysis has thus far focused on the question in which corridors should the RTV system be placed, it should also be understood that corridors create an almost infinite number of possibilities for routes to use all or portions of multiple corridors to provide effective RTV service to and from all parts of the County.

Finally, the Task Force made a conscious effort to “pre-wire” the Countywide network to be easily integrated into a potential future regional rapid transit network, which may include interconnectivity with other jurisdictions, even through the use of

Interstate Highways, where appropriate. The visual appearing below demonstrates how grade- separated connections may be achieved in such situations.



F. Integrate the RTV System into a Multi-Modal Network

When different transit systems coordinate and interface with each other, people's access to transit improves. In terms of "connectivity," the RTV system will interface with Metrorail, Ride-On, the future Purple Line and CCT, MARC commuter rail, MTA express buses, Park and Ride lots, emerging Bike Share stations, as well as provide pedestrian access to stations. Today there are many destinations that are difficult to access without an automobile, however the total approximately 160 miles of the RTV system connecting with other modes will make a considerable number of destinations truly transit-friendly. This increasing ridership will create a net gain across many transit modes. While commuters know no jurisdictional boundaries when they travel from one place to another, for transit to cross jurisdictional boundaries there must be active coordination between the County and other jurisdictions about their mass transit projects.

Table 2: RTV Connectivity to Other Transit Modes

Metrorail	Friendship Heights, Bethesda, Medical Center, Grosvenor, White Flint, Twinbrook, Rockville, Shady Grove; also Silver Spring, Forest Glen, Wheaton, Glenmont; possible connections to Fort Totten
Ride-On	Will be reconfigured to act as “feeder” to RTV stations; and to provide “local” service, may also have to run along same corridors as RTV
Purple Line	Bethesda, Chevy Chase Lake, Silver Spring, Langley Park
CCT	Shady Grove, Germantown, Metropolitan Grove, Clarksburg
MARC commuter rail	Metropolitan Grove, Kensington
MTA express bus	Routes on I-270, ICC and US29
Park & Ride	List stops on ICC; list stops @termini of RTV routes
Bike Share stations	Rockville & Shady Grove have funding; Forest Glen applying for TIGER grant.
Pedestrian access	Needed to all RTV stations; special concerns regarding safe access to new RTV stations in the median.
Mass transit in other jurisdictions	Coordinate with DC, Prince George’s, Howard and Frederick regarding their emerging plans

G. Serving Existing Neighborhoods

Much of the discussion relating to the imperative for the County to build a transformational people-moving capacity asset (in the form of the proposed RTV system) revolves around the observation that Montgomery County has matured from a quiet “suburban bedroom community” at Washington, D.C.’s northwestern border of a half century ago to a thriving urban metropolis in the dawning of the 21st Century, and will continue to do so for the decades to come. But those observations should not be taken out of proper context.

Essentially, the expected future evolution of Montgomery County from suburban to urban is isolated to only certain portions of the County; for the most part, contained in what the County’s 1964 General Plan referred to as the “Urban Ring,” and to a lesser extent the area in the 1964 General Plan that is now the “I-270 Corridor.” The vast majority of the County’s land area --- referred to as either the “Residential Wedge” (such as the Potomac, Sandy Spring, and Burtonsville areas) or as the “Agricultural Wedge” (such as north of Olney, Damascus, and Poolesville) --- are not planned to experience any transition to any such “urban” qualities. The County has been especially vigilant, and takes special pride, in preserving the County’s “Agricultural Reserves,” and has every intention to maintain that vigilance in protecting the County’s Agricultural Reserves.

Indeed, it is because the County's remaining open space will be preserved - and that those areas are not projected to contribute meaningfully to the expansion of jobs and tax base to support the funding of the County's essential services - that there is such a powerful imperative to maximize the job growth and tax base growth as much as possible within the "Urban Ring" and, to a lesser extent, in the "I-270 Corridor." Accordingly, all discussions relating to Montgomery County's evolution from "Suburban to Urban" is not directed to those Residential Wedges and Agricultural Wedges that will be preserved. In fact, the more the proposed RTV system encourages the concentration of future jobs and tax base growth to transit-oriented developments centered around proposed transit stations (i.e., Metrorail, MARC, Purple Line, and RTV stations), the less risk there will be that such growth spills into the Residential Wedges and Agricultural Wedges.

Even for the mature existing neighborhoods within the Urban Ring (such as Bethesda, Kensington, and Silver Spring) and within I-270 Corridor (such as Rockville, Gaithersburg, Germantown, and ultimately Clarksburg), by concentrating the future job and tax base growth tightly around the transit stations, those mature neighborhoods can enjoy the vibrancy and vitality of the amenities and public spaces provided by those exciting new transit-oriented developments; but also preserving the character and style of their specific neighborhood.

"Downtown" Bethesda is an excellent example of how the vibrancy surrounding the Bethesda Metro station (including Bethesda Row) brings wonderful amenities to the surrounding neighborhood residents (such as the Arlington Road/Bradley Lane neighborhoods), but maintains the character of those communities. These attributes make those mature residential neighborhoods even more attractive and in greater demand, which in turn increases the values of the homes in those neighborhoods.

Moreover, for those neighborhoods that are proximate to proposed future activity centers in the coming decades, if traffic congestion were to continue on the current trajectory, all the major arteries in the County (such as Rockville Pike/Route 355, Georgia Avenue, and Route 29) would become so clogged, that the through traffic would most certainly find their way into and through these proximate neighborhoods in order to find some path to circumvent the back-ups on the major arterial roads. **The proposed RTV network promises to be the most effective and efficient way to dramatically increase the people-moving capacity of our major arterial roads to best meet the future anticipated demands of those commuting through Montgomery County. In**

this way, the proposed RTV system is one of the most effective proactive measures we could be taking today to best preserve all of our mature existing neighborhoods for the next 20, 40, or 60 years, and beyond.

H. Our Social Contract

A well functioning and progressive community undertakes a wide range of activities to serve all and specific parts of its people. Some of those things are performed by the private sector and volunteer organizations. There are things that are of such a nature or scope that they are not or cannot be performed by those private and voluntary groups are performed by the government. A major infrastructure undertaking is typically one of those things.

As discussed elsewhere in this Report, while our community places emphasis and priority on services such as education, public safety and other functions, providing an effective transportation infrastructure is a core responsibility of government, and one that serves as a foundation on which other functions rest – and that which enables other functions to be performed.

In evaluating a transportation system in general and a transit system in particular, it is difficult to parse the costs and benefits to and among various constituencies and groups within our community. A rapid transit system of the kind the Task Force proposes benefits everyone. While policy-makers may decide that certain portions of our population should pay relatively more for the construction of the system than others, groups who pay these disproportionate costs are also groups that will derive disproportionate benefits.

Nonetheless, the system being proposed will serve us all and make us all better. Investment in that system will be a tangible manifestation of the social contract of our community.

III. THE PROPOSED RTV SYSTEM

A. Designing the Attributes of a “World Class” RTV System

1. To the Maximum Extent Possible, Dedicated RTV Lanes

The Working Group on System Design Attributes (“Work Group A”) studied scores of different designs and amenities of various rapid transit systems from around the World, and considered what specific features would be most important to Montgomery County “riders of choice,” so that the proposed RTV system would be able to transform commuting behaviors of those who today commute via SOVs. Work Group A established a classification of the “World Class” attributes in accordance with the level of priority Work Group A ascribed to a particular characteristic. See full report of Work Group A at **Appendix A-1** to this Report. After thorough evaluation and discussion, Work Group A unanimously resolved that there was one quality, paramount to all others in a proposed RTV system that was absolutely essential:

To the maximum extent possible, having physically separated, dedicated RTV lanes THROUGHOUT THE ENTIRE SYSTEM, so the system’s RTVs would not become comingled into mixed general traffic.



The full Task Force unanimously adopted the above statement. In the absence of this essential characteristic, the operations of the proposed RTV system could not be assured to be rapid, reliable, or convenient to prospective riders; and thus the ability to transform commuting behaviors could not be assured.

2. To Transform Behavior of “Choice Riders,” Need a Unique “Branding” that Represents the Revolutionary and Extraordinary Qualities of the County’s Proposed RTV System

After thorough analyses of other attempts for surface rapid transit systems in the United States, especially so-called “BRT” technology, the Task Force learned that there is considerable confusion about differences in the basic attributes of the system contemplated by the Task Force as opposed to other forms of bus mass transit. Indeed, in many ways, the RTV system that the Task Force proposes does not exist anywhere in the

United States. For one thing, our proposed RTV system is a fully integrated network of at least 140 constructed miles, which connect to other modes of mass transit throughout the Region, including the Metrorail subway system and the eagerly anticipated Purple Line light rail system. Other rapid transit systems in the United States tend to be a few miles long for a few route lines (such as the approximate 9 miles of Cleveland's "Healthline"). Moreover, the Task Force proposes aesthetically pleasing and functional rapid transit vehicles, stations and other premium "World Class" qualities.

If, however, potential "riders of choice" are unaware of these high qualities - or worse, are misinformed about them - then the transformational behavior necessary to achieve more transit use may be significantly delayed. Even the extraordinary Metrorail subway system experienced a long period of very gradual ridership growth, despite having "World Class" qualities. For this reason, the Task Force unanimously adopted as another essential element of a "World Class" RTV system an investment that may not be so obvious: the branding of the system, as follows:

Developing a "World Class" Branding (with distinctive physical attributes), developing a targeted Public Education Campaign (with a compelling case for making the public investment required to create an innovative "World Class" Countywide Rapid Transit System), and developing a strategic Marketing Campaign to best assure maximum ridership potential (which, in turn, maximizes the proposed system's financial viability).

As contemplated by the Task Force, a branding effort not only includes the naming of the system, but also education regarding the nature and purpose of the system, services available, as well as marketing strategies that will encourage on-going use. With respect to the naming of the system, such planning needs to take place sooner rather than later in order to enable designers to encompass branding concepts in station design as well as any artistic treatment of vehicles and stations²⁶. This work should begin at the earliest possible time while other planning, environmental assessment and preliminary design efforts are undertaken.

²⁶ The Task Force adopted the abbreviation "RTV" as a shorthand description of the unique rapid transit vehicle system that it has proposed. However, no one should mistake the abbreviation "RTV" as the name of the system. It is just a placeholder until a real name, a "brand," is found.

3. Other “World Class” Features

With the Task Force adopting as its highest priority of investment in a “World Class” rapid transit system being the construction of physically separated, dedicated RTV lanes throughout the entire network (the maximum extent possible), and with the next highest priority of initial investment being a proper branding of this novel, transformational rapid transit system, the Task Force established a priority ranking of dozens of other qualities that would make the proposed RTV system “World Class.” The full description of all the attributes and the priorities adopted by the Task Force is set forth in the attached **Appendix A-1**. Among the more noteworthy attributes and priorities adopted by the Task Force that would distinguish the proposed RTV system from all other modes of choice in the Washington Metropolitan Area would have are the following:

Transit Task Force adopted the following characteristics as Grade “A” Essential Attributes:

- (a) RTVs must be sleek and stylish.
- (b) RTVs must have multiple wide doors on both sides of the RTVs.
- (c) RTVs equipped with WiFi capabilities and electronic real-time messaging.



- (d) Stations must be of a consistent and distinctive style.
- (e) Stations must be safe, wide, and weather-protected.



- (f) Stations must have level platform boarding with handicap accessibility.



- (g) Stations must be equipped with real time data and with user-friendly maps.



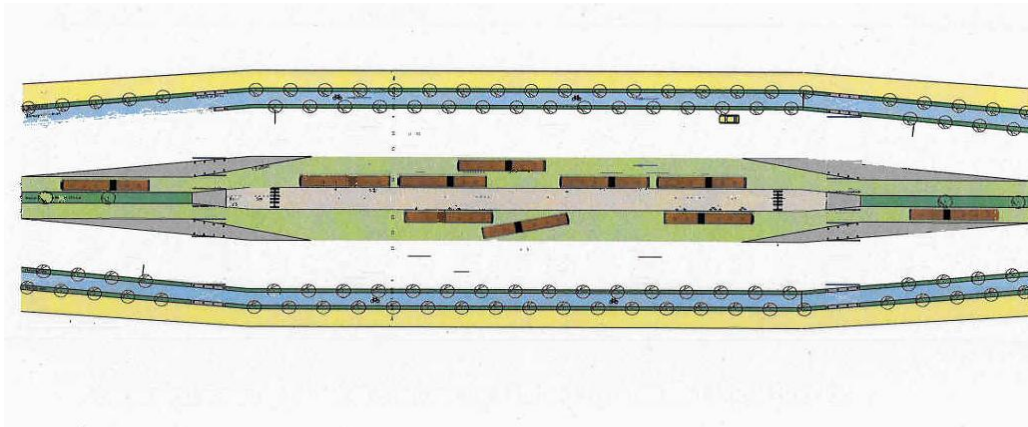
- (h) Stations must provide off-vehicle fare collection.



- (i) Peak-peak period frequency of 3-5 minute headways.
- (j) Off-peak period frequency of 5-7 minute headways
- (k) Lanes with intersection improvements and coordination with other modes of transportation.
- (l) Multi-modal integration (pedestrians, bicycles, Zipcars®, taxi service, Ride-On and Metrobus, shuttle buses and neighborhood circulators).

The Transit Task Force adopted the following attributes as Grade “B”—Highly Desirable, but not necessarily essential:

- (a) Stations are set back from the intersection.
- (b) Stations have physically separated passing lanes for limited express and local service.



- (c) RTV lanes in central verge of road (where appropriate).
- (d) Operate late nights and on weekends with no more than 15-minute headways.

The Transit Task Force adopted the following attributes as Grade “C” Preferable, but not necessarily Highly Desirable:

- (a) Right-of-way enforcement (e.g., photo capture of violators)
- (b) Peak period and peak-peak period pricing
- (c) Single stations serving both directions (where appropriate)
- (d) Bicycle lanes in corridor (but NOT within the RTV dedicated lanes)

B. Proposed Corridor Network

1. The Criteria Considered in Adopting the Proposed Route Network

After designing the proposed RTV system’s “World Class” attributes, the work of the Task Force then focused on what the proposed routes would be for the full RTV network. The research and study of this issue was delegated to the Working Group on Routes and Development Sequencing (“Work Group D”).

Work Group D reflected on the fact that a comparison can be made between how the road system is laid out and how the transit system needs to be laid out. As defined in many master plans, a properly designed roadway system recognizes that some roads should carry large traffic volumes, emphasizing movement, while others provide access to homes and employment and carry much lower traffic volumes. The hierarchy of roadways that serve the range of needs consists of six road classifications:

1. Freeways: Provide for movement of vehicles at high speed over significant distance. Access is limited to grade-separated interchanges.
2. Major Highways: Provide less speed and mobility than freeways, but more access at intersections. These are normally six lane roads, at least in the final build-out for the urban and suburban areas.
3. Arterial Roads: Connect major highways and provide more access points at lower speeds. Typically, more than half of the traffic is through traffic. Often these are further classified as major and minor, which are four lanes and two lanes respectively
4. Commercial Business: Connect retail and commercial areas.
5. Primary Residential: Carry traffic volumes between minor arterials and secondary roads. Some of these carry substantial amount of through traffic and were at one

time classified as arterial. Other such roads serve a residential area that nearly always has a public school or other institutional facility located on it.

6. Secondary or Tertiary Residential Streets: Connects residential areas. Vehicles can park on both sides of the street which may leave a single travel lane down the middle.

The transit system today largely has three levels: Metrorail, express bus and local bus. For the road equivalent, Metrorail serves as the freeway. While there are some exceptions, local buses largely take people to Metrorail stations and drop people at stops along the way. Local buses today operate over the roads starting with the major classification and continuing to primary and occasionally to secondary. The local buses operate at lower speed, with many stops and they frequently travel on many roads so they do not provide direct service for most people.

The idea of the RTV system is to fill the gap by adding another transit level to the hierarchy that is between Metrorail and local bus, and to provide a very attractive alternative to the use of private vehicles. For the road equivalent, the RTV system is a major highway or major arterial. In fact, the purpose of RTV is to primarily operate on major roads and major arterial roads. Like the roads in this classification, the RTV system is intended to be rapid (as in **rapid** transit vehicle) and to largely travel along a single road or limited number of roads linked into a route. The network of routes will allow passengers to switch when needed to reach their destinations.

With the implementation of the RTV system, local bus routes will be restructured so that they collect passengers at their home, place of employment, retail establishment or other activity centers. The local bus will take people to nearby activity centers and to a bus station where an RTV can be accessed. After operation optimization studies, it may be that most local buses would no longer terminate at a Metrorail station but, rather, at an RTV station.

The reader is now asked to focus on the selection of the RTV routes. The MCDOT initiated the PB Study to identify key corridors within the County that could facilitate premium rapid transit service and to see if a network of BRT corridors and routes was feasible. The PB Study found that the 16 corridors comprising the 148.3-mile network of BRT routes described therein were feasible and appropriate for further study.

Group D considered the set of 16 corridors suggested in the PB Study. However, Work Group “D” concluded that those 16 corridors were inadequate to address a more

expansive set of corridors, segments and, eventually a route system, that would provide the transit equivalent of major roads as indicated above. The changes included the following:

- a. The County's major traffic corridors are aligned in a north-south direction. The Task Force does not view the proposed system as a series of independent lines that would simply replace one or more existing Ride-On routes; but instead, views the proposed RTV system as a comprehensive, integrated Countywide network that provides an alternative to driving. After looking carefully at the PB Study, Work Group D found that some corridors and segments were missing -- primarily east-west routes -- and reinstated some of the routes that were omitted from the original routes considered by PB. For this reason, the Task Force thought omitting Norbeck Road from Georgia Avenue to Veirs Mill Road was not prudent, and thus restored that corridor into the proposed network.
- b. A stronger east-west connection is vital to the interconnectivity of the County now and into the future. For this reason, failing to have Randolph Road east of Georgia Avenue a part of the RTV network was also imprudent, and thus restored that corridor into the proposed network.
- c. Another important consideration was more interconnectivity to the future Purple Line. The Task Force thus proposed segments that would provide more interconnections with the Purple Line at Connecticut Avenue, University Boulevard, and New Hampshire Avenue.
- d. The final consideration was connections to surrounding jurisdictions (including to the District, Prince George's County, and Howard County), as well as potential connections via I-270 and I-495 to the North toward Frederick and to the South toward Northern Virginia, as well as via I-95 to the North toward Baltimore.

With these additional considerations, the Task Force added seven more corridors and segments consisting of approximately 14 net miles more than included in the PB Study network. The RTV corridor network is reflected on the map attached as **Appendix D-4**.

2. Corridor Design

After defining the corridors, the Task Force struggled with how they should be constructed. The proposed RTV network primarily uses State, and to a much lesser extent County, six-lane major roads and four-lane major arterials. These roads for the most part are already congested with vehicular traffic. The PB study addressed existing right-of-way that could be used for the RTV system, but the amount of such space is limited. It is also well known that land next to the existing roads is largely developed, especially in the “urban core” and inter-suburban areas of the County. The question is which options exist.

The Task Force engaged The Traffic Group, Inc. (“TTG”), to address that and other related questions. The three-month study by the TTG looked at what could be done quickly, which implies with a limited taking of property. The TTG report identified five basic configurations, and variations on them. TTG’s five basic configurations are:

- a. Use existing travel lanes in mixed traffic.
- b. Put two dedicated lanes in the median.
- c. Put one dedicated lane in the median and use a regular travel lane in mixed traffic in the other direction. The dedicated lane would be used in the peak direction of travel and the regular travel lane would be used in the non-peak direction. The direction would shift between morning and evening period periods.
- d. Use the right lane in the peak direction for the RTV and the remaining lanes for vehicles. Thus it would be used for one direction in the morning and the other direction in the evening. This is how US-29 currently operates south of Sligo Creek Parkway.
- e. Dedicate the curb lane in each direction of travel for RTV. This means that one regular travel lane would be lost. These lanes are known as Business Access and Transit (“BAT”) lanes. The BAT lanes would be used by motor vehicles making right-turns but not for other travel.

Readers are referred to **Appendix D-2** for typical corridor configuration charts, which reflect the above alternative road treatments for RTV.

The TTG report showed that the configuration can change along each route. In the TTG report, each route required at least two configurations and often more. It also

showed that the mixed traffic configuration was required at most major intersections where four-lane and six-lane roads cross. In most routes, a single configuration was used between major intersections but there were examples where multiple configurations were used. A quick evaluation of the configurations follows:

Mixed Traffic: Using existing travel lanes is the most economical but it fails to address the goal of making transit time competitive with driving in that the RTV is stuck in congested traffic that moves slowly. The existing Metrobus and Ride-On buses have this problem today.

Dedicated Median Lanes. If there was sufficient right-of-way and cost was not an issue, then using dedicated lanes in the median is the preferred configuration. It has the advantage of rapid travel since the RTVs are not slowed by motor vehicles. Except for parts of US-29 (north of Briggs Chaney) and Georgia Ave (north of Randolph), sufficient right-of-way rarely exists and development on either side of the road largely makes expanding the right-of-way difficult.

One reversal median lane: This approach will reduce the amount of space required in the median and thus reduce the cost. This approach was used extensively in the TTG report. The issues raised by using this configuration are: how to handle many left-turns, where to place the stations and how best to address pedestrian movement. The use of the RTV system means that large numbers of people will need to access the station and the design must address how to accommodate them crossing vehicle travel lanes when there are few such pedestrians today. There are alternatives to addressing the need for vehicle drivers to make left-turns. Item (c) above states one solution, but it requires more right-of-way in some locations. Left-turns could be eliminated at some intersections where a viable nearby alternative exists, and some left-turns could be allowed from the RTV lane where the number of such turns is small and where signalization techniques can be employed.

BAT Lanes: This would remove one lane of general travel in each direction, and this could make congestion worse since most sections of all the routes are already congested and removing a lane would be unacceptable to motorists. An idea to address this limitation was to allow high occupancy vehicles (“HOV”) to use the lane. The HOV level would be adjusted as necessary to keep the RTV moving without congestion and without increasing congestion in the remaining travel lanes. However, use of a lane as a HOV lane does not create a sense of permanence about the dedication of space to RTV

use. BAT lanes eliminate or minimize the large pedestrian circulation issue discussed above. The same station could be used for two RTV routes that cross and also for local buses. Another downside of the BAT configuration is that vehicles turning right into residences and/or businesses would slow the RTV vehicle. In highly developed areas, such as the Central Business Districts, delivery vehicles often stop in the right travel lane, which would further interfere with RTVs using that lane. In some sections, the BAT could use a wide shoulder, and thus not require the taking of any lane.

Reversible Lanes: This has the advantages of BAT lanes but increases complexity and presents traffic management and safety issues.

The Task Force also received a briefing from the White Flint Partnership concerning the relationship of the White Flint Sector Plan to the RTV system. The White Flint Partnership has studied the feasibility of a 50 foot dual dedicated RTV center lane on Rockville Pike within the White Flint Sector. At its own expense, the White Flint Partnership engaged VIKA Engineering to perform an alignment study of the 1.2 miles of Rockville Pike within the Sector. The study was completed February 2, 2011. The study showed that the dual dedicated RTV center lane is achievable on Rockville Pike, mostly within the existing right-of-way, except for some minor takings. There would be takings across 23 different properties. Total takings would be approximately 31,000 square feet of land. The ultimate design with dedicated bicycle lanes, six rows of trees, an 8 foot parking lane, and an 18 foot sidewalk would also require additional dedication by the individual adjoining property owners.

On a related point, the Task Force also recognized that the question of whether other transit vehicles than RTV vehicles will be permitted to use lanes dedicated to RTV use also requires further study. While not unanimous, the Task Force generally agreed that use of dedicated RTV lanes by other transit vehicles would unduly compromise the characteristics of the RTV system and may compromise the operating efficiency of the RTV system.

The Task Force discussed the above configurations at length and concluded that more detailed study is required to consider the configurations and related issues. There may be other alternatives found once detailed study is undertaken. There are two studies underway that start to address this need. The Planning Board staff is working to update the Master Plan of Highways and Transit. In addition to the work being done by these studies, detailed investigation is needed to address how to restructure the local bus routes

to integrate it with the RTV network (recall that many riders will need to transfer between local bus and RTVs). As part of that study, the number and placement of stations must be determined. MCDOT has taken the first steps to address this optimization study, with the assistance of an outside consultant made available to the Task Force by a separate Rockefeller Foundation grant. The Task Force believes that the RTV system should be part of a common regional fare card system.

As the Task Force understands it, part of what the Planning Staff is addressing is the extent to which existing travel lanes can be repurposed to obtain one or two RTV lanes. This analysis will undoubtedly consider and weigh the potential positive impact of repurposing (to the extent necessary) on people-moving capacity as opposed to the potential negative impact on automobile traffic. See discussion in Part II (A) above.

In undertaking the additional studies, the Task Force agrees that optimal system performance is achieved through development of median space-based dedicated guideways in which the RTVs would travel, but recognizes that in certain circumstances this may not be feasible due to lack of available space, safety issues, or issues concerning access to neighborhoods.

There are multiple groups that will undertake parts of the needed studies: the Planning Board, SHA and MCDOT. The Task Force urges the Planning Board, and subsequently the County Council, to consider the criteria listed below as it studies and prepares the *Countywide Transit Corridor Functional Master Plan* (which would, if adopted by the Council, amend the **Master Plan of Highways and Transitways**) that will identify or reserve future right-of-way to be used to enhance transit within the County. The Task Force recognizes that other agencies of government, including but not limited to the Maryland State Highway Administration (“SHA”) and MCDOT, will also play a role in the planning and implementation of the proposed RTV system. The Task Force urges such agencies to give serious consideration to the points presented here as they exercise their responsibilities in connection with the planning and implementation of the RTV system:

- a. In order to have an RTV system which is rapid and reliable enough to attract and retain riders, and thereby alleviate present and future congestion, as well as offer other potential benefits, the RTV system must meet a minimum standard of performance. While the setting of that minimum standard may be subject to further consideration, the Task Force asks policy-makers to apply the following minimum

performance standard: **the total travel time for a complete trip within a given RTV route must be comparable to the total travel time of a private automobile travelling over that same route at the same time under current conditions existing prior to implementation of the RTV system without substantial adverse impacts on automobile traffic (the “RTV Performance Standard”).**

b. The ability of the RTV system to meet the RTV Performance Standard will be a function of the extent to which the actual system that is developed conforms to optimal system characteristics. For example, an RTV system with dual dedicated guideways operating in the median space of a corridor with absolute signal prioritization will achieve the greatest level of performance (and will meet or exceed the RTV Performance Standard). On the other hand, an RTV system which has a substantial portion of its network operating in mixed traffic is unlikely to meet the minimum RTV Performance Standard, as least within those corridors and along those routes which suffer mixed traffic operation.

c. Decision-makers are asked to consider the RTV Performance Standard when deciding how much right-of-way they will reserve for transportation uses and, inferentially, how much of the real estate dedicated to roads they will dedicate to transit operations in the form of the RTV system.

d. Decisions on the techniques to be used to enhance performance should be made on a case-by-case basis and, to the extent possible, during the design of the system rather than at the level of policy planning.

e. When analyzing right-of-way issues, the Task Force asks decision-makers to adopt the Task Force’s position that optimal system performance is achieved through development of median space-based dedicated guideways. Positioning of guideways at the curb should only be made in exceptional circumstances where median placement is infeasible, either due to the lack of available space, safety issues, or issues concerning the access to neighborhoods which cannot otherwise be resolved.

f. The Task Force supports the idea that the Planning Board may recommend to the Council the reservation of certain real property now for the purpose of contemporaneous right-of-way acquisition, and may also recommend that with respect to right-of-way that may not be purchased now but that may be necessary in the future that such additional right-of-way would be “identified” but not “reserved.”

C. Proposed Phasing of Build-Out

1. The Criteria Considered in Adopting the Phasing of the Route Network

Once the Task Force unanimously adopted the actual network of corridors, segments and extensions proposed by Work Group D, the Task Force then considered the potential sequencing (or phasing) of the system, recognizing that for practical construction and operational reasons, the entire system could never be constructed simultaneously. Work Group D was again charged with the responsibility to study thoroughly the number of complex physical, engineering, construction, and operational challenges associated with building such a Countywide integrated network, while the County maintains maximum feasible commuting mobility in operation throughout the build-out period. Work Group D ultimately unanimously adopted the following set of criteria that would guide the ultimate sequencing (or phasing) of the full network, and the full Task Force unanimously adopted the following criteria for determining the most effective phasing of the build-out:

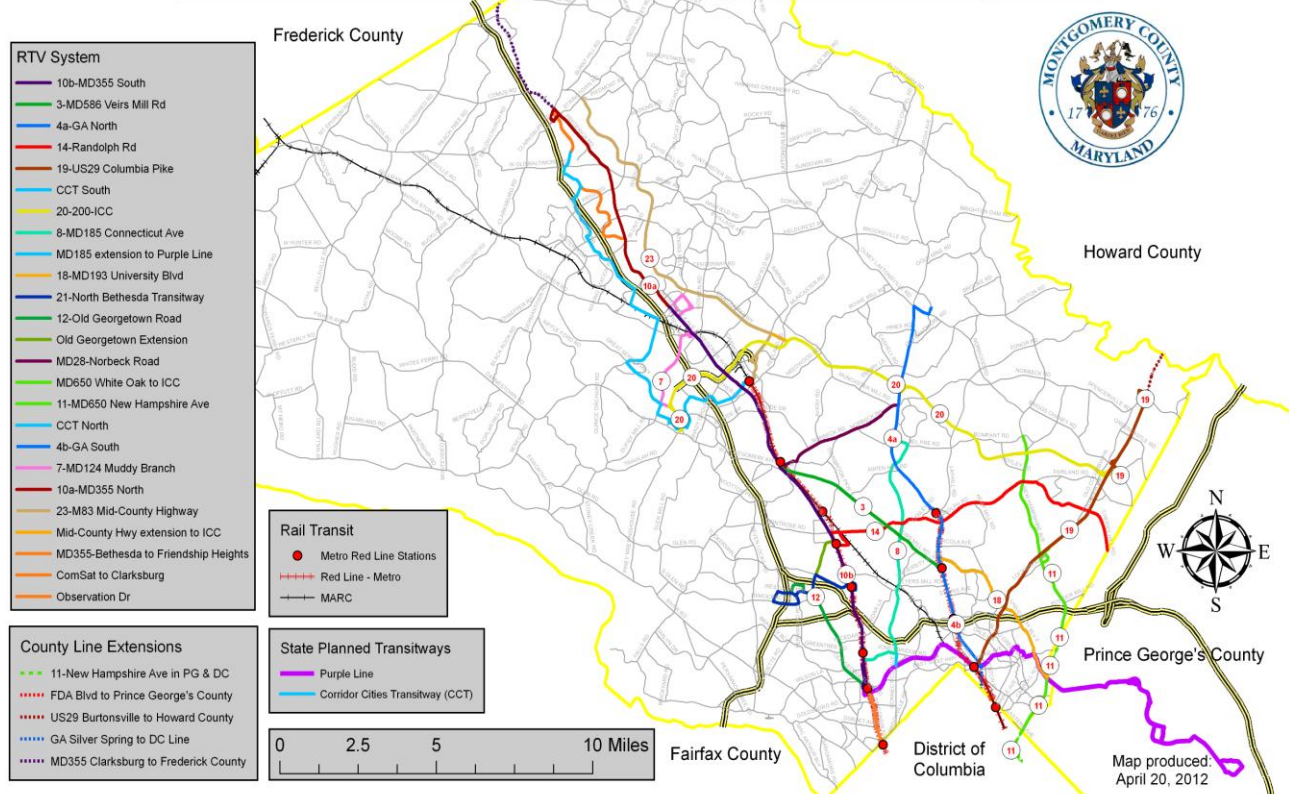
- a. Dividing the corridors into phases that would be manageable for construction workloads and costs.
- b. Avoiding construction of adjacent parallel roads during same time to prevent an entire traffic pattern from being taken out of service during construction.
- c. Planning for adjacent alternative traffic routes and alternative transit options during construction to minimize disruption for commuters during construction.
- d. Anticipating how each phase would transition to subsequent phases, so that constructing the additional corridors, segments and could be accomplished most efficiently and effectively.
- e. Coordinating each phase to include segments that would provide reach to all parts of the County.
- f. For the system to be most effective from the outset, the first phase must include the eastern, central, and western portions of the County, and provide at least two east-west connections (in this instance, the ICC and Randolph Road).

- g. The phasing should consider the public policy objective of promoting responsible business and job growth opportunities, which could be facilitated with access to the RTV system.
- h. The phasing should consider the public policy objective of providing for and encouraging easy linkages to surrounding jurisdictions (e.g., D.C., Prince George's County, Howard County, and Frederick County).
- j. The phasing should consider the public policy objective of providing RTV access to the County's multi-cultural and diverse socio-economic populations.
- k. The phasing should provide RTV access for large employers, hospitals, universities, community activity centers, and public high schools (perhaps even offering the opportunity to use RTVs in lieu of school buses or students driving cars to high schools).

The Task Force recommends building the full RTV system in three phases, and within nine years (the "Base Implementation Schedule" referred to in the Financial Plan described in Part VI below). Each phase will include both north-south and east-west corridors to emphasize the Countywide connectivity and breadth of the system. One of the major east-west RTV corridors, the ICC, is already built and its high-speed lanes will provide rapid access for RTVs moving passengers east and west. Thus, the ICC will be part of Phase One²⁷. The Task Force recommends the RTV network phasing plans reflected on the maps appearing below and in **Appendix D-4** be implemented.

²⁷ No real construction will take place on the ICC; however, its unique location and capabilities represent an opportunity to create a great deal of connective functionality.

Transit Task Force Full Rapid Transit System



The following is a phase-by-phase description of the corridors, segments and extensions being recommended by the Task Force:

PHASE ONE

Route Segment/Estimated Length

20-200-ICC 22.9 miles

(I-270 to 29/Colesville Road)

14-RANDOLPH ROAD

(355/Rockville Pike to FDA Boulevard) 12.5 miles

10b-MD355 SOUTH

(Mont Village Ave to Bethesda Metro Station) 12.1 miles

ROUTE 29/COLESVILLE ROAD

(Burtonsville/198 to Silver Spring Metro) 10.7 miles

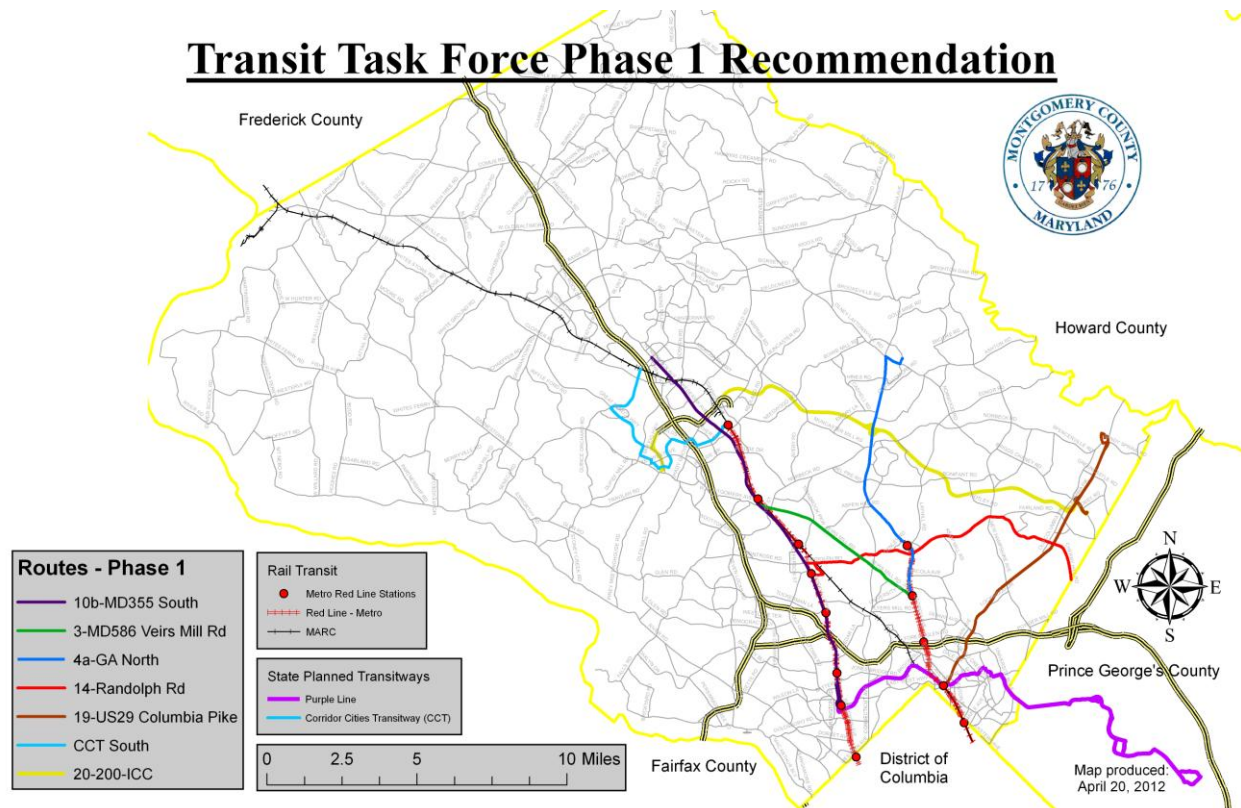
4a-GEORGIA AVENUE (North)

(Olney to Viers Mill Road) 9.8 miles

3-MD586 VEIRS MILL ROAD

(Rockville/County Office Buildings/Metro to Wheaton Metro Station/Georgia Ave) 6.7 miles

TOTAL MILES IN PHASE ONE: ~74.7 miles²⁸



PHASE TWO

Route Segment/Estimated Length

11-MD 650 NEW HAMPSHIRE AVENUE MC

(ICC to Fort Totten²⁹*) 10.1 miles

8-MD 185 CONNECTICUT AVENUE

(Georgia Avenue/Aspen Hill to Purple Line and spur on Jones Bridge Road to Rockville Pike/Medical Center) 7.6 miles

18-MD 193 UNIVERSITY BOULEVARD

(Georgia Ave to New Hampshire Ave/Purple Line) 6.4 miles

12-OLD GEORGETOWN ROAD 5.8 miles

(Montrose Parkway/Randolph Road to Bethesda Metro/Wisconsin Avenue)

MD 28 - ROUTE 28 TO ICC

²⁸ Of the 74.7 miles in Phase I stated above, 51.8 miles will be new construction. However, if the CCT were to be built as part of the RTV system, then the Transit Task Force recommends that the first stage of the CCT, consisting of 9.1 miles, be constructed as a part of Phase One of the RTV system. This would mean that the total corridor mileage of Phase One would be 83.8 miles, and that 60.9 miles would be new construction.

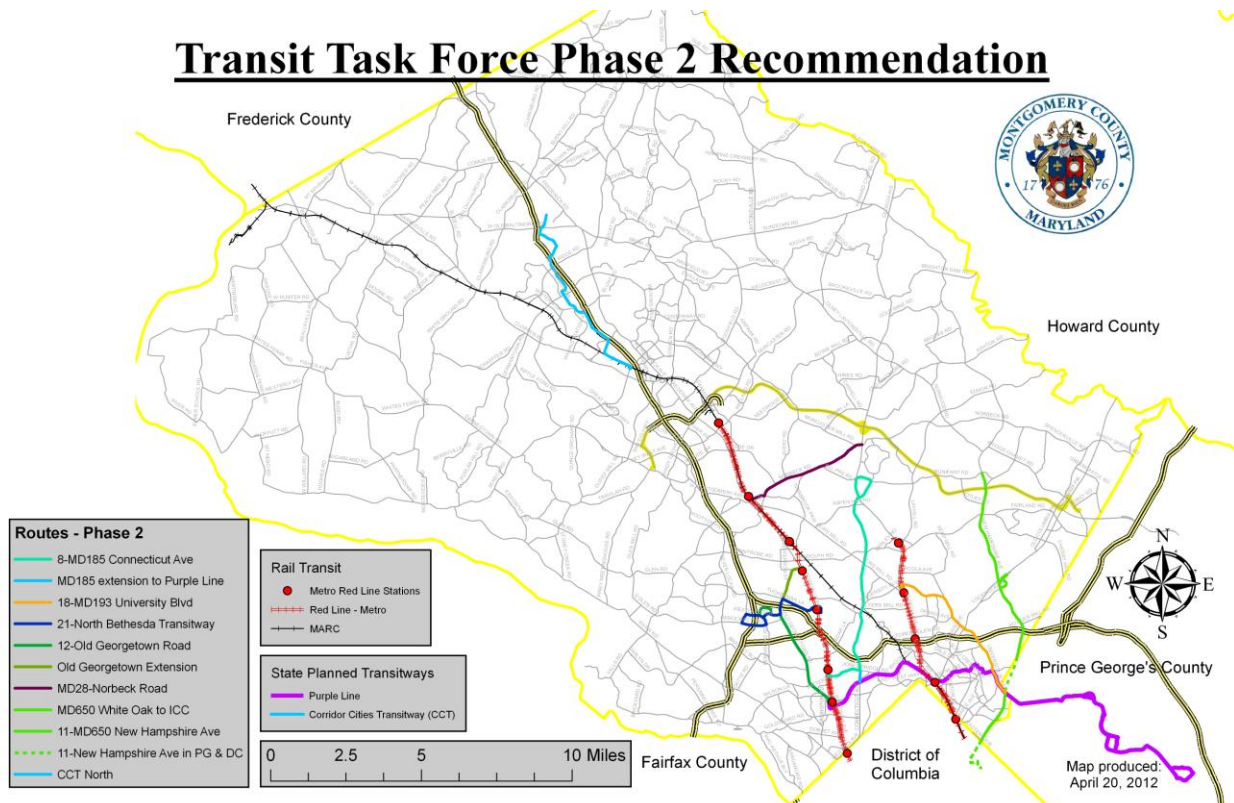
²⁹ Approximately 5.3 miles of this segment, south of Elton Road/Beltway, would cross into Prince George's County, and presumes coordination with Prince George's County and the District of Columbia.

(From Viers Mill Road to ICC) 5.5 miles

**21 - NORTH BETHESDA TRANSITWAY/
DEMOCRACY BOULEVARD**

(355/Rockville Pike to Tuckerman to Democracy Blvd/Montgomery Mall) 5.1 miles

TOTAL MILES IN PHASE TWO: ~40.5 miles³⁰



PHASE THREE (All Remaining Segments, After Phase Two)

Route Segment/ Estimated Length

10a – MD 355 NORTH

(Montgomery Village Avenue to Clarksburg/CCT, including the Spur at Middlebrook Road via Observation Drive and Montgomery College-Germantown) 14.9 miles

23 – M83 MID COUNTY HIGHWAY

(Clarksburg/MD 27 to ICC)** 13.4 miles

LAKEFOREST MALL/MUDDY BRANCH RD

(CCT to Gaithersburg) 7.2 miles

³⁰ Of the 40.5 miles in Phase Two of the RTV system noted above, all would be new construction. If the CCT is built as a part of the RTV system, this would add 5.9 miles to Phase Two, which would mean that the total mileage and the new construction mileage would be approximately 46.4.

4B- GEORGIA SOUTH

(Veirs Mill Road to Silver Spring Transit Center) 3.9 miles

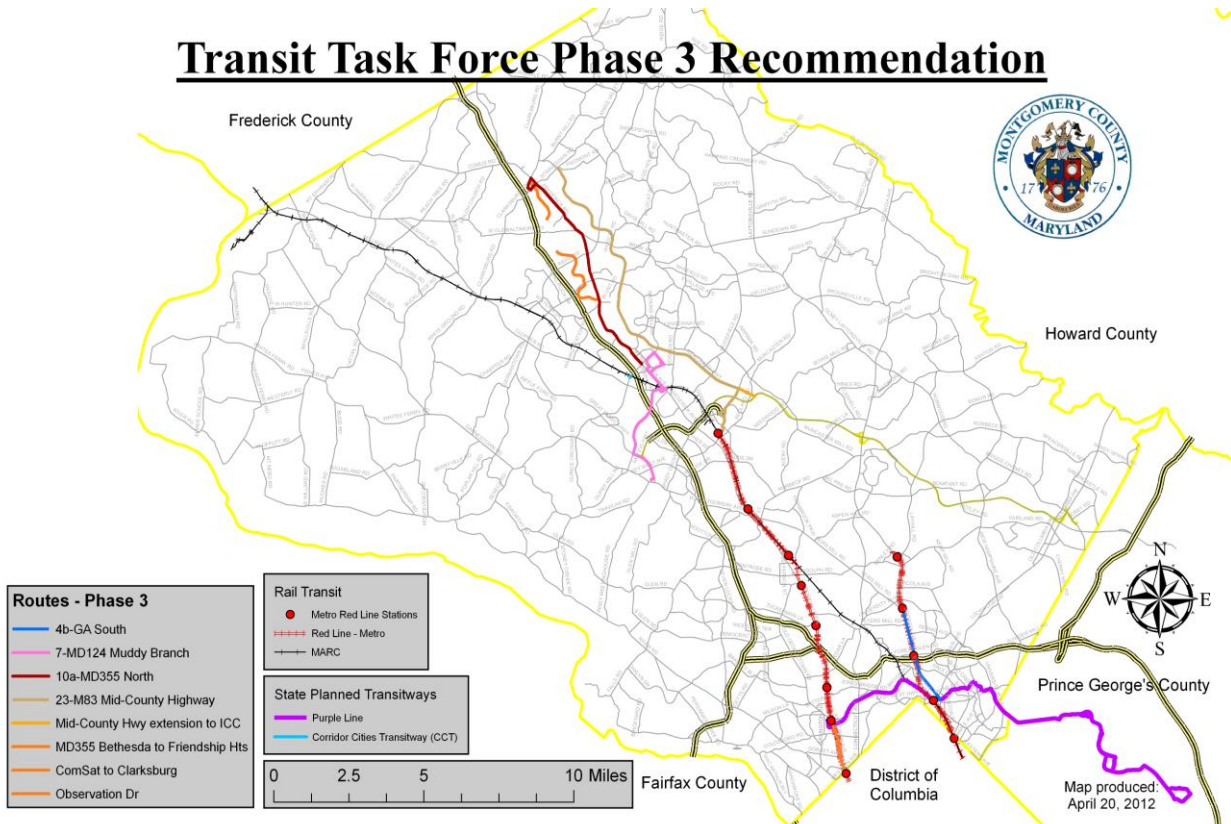
WISCONSIN AVENUE

(Bethesda Metro to Friendship Heights Metro) 1.6 miles

NORTHWEST CONNECTOR

(Between CCT and 355 - TBD) 1.0 miles

TOTAL MILES IN PHASE THREE: ~42.0 miles³¹

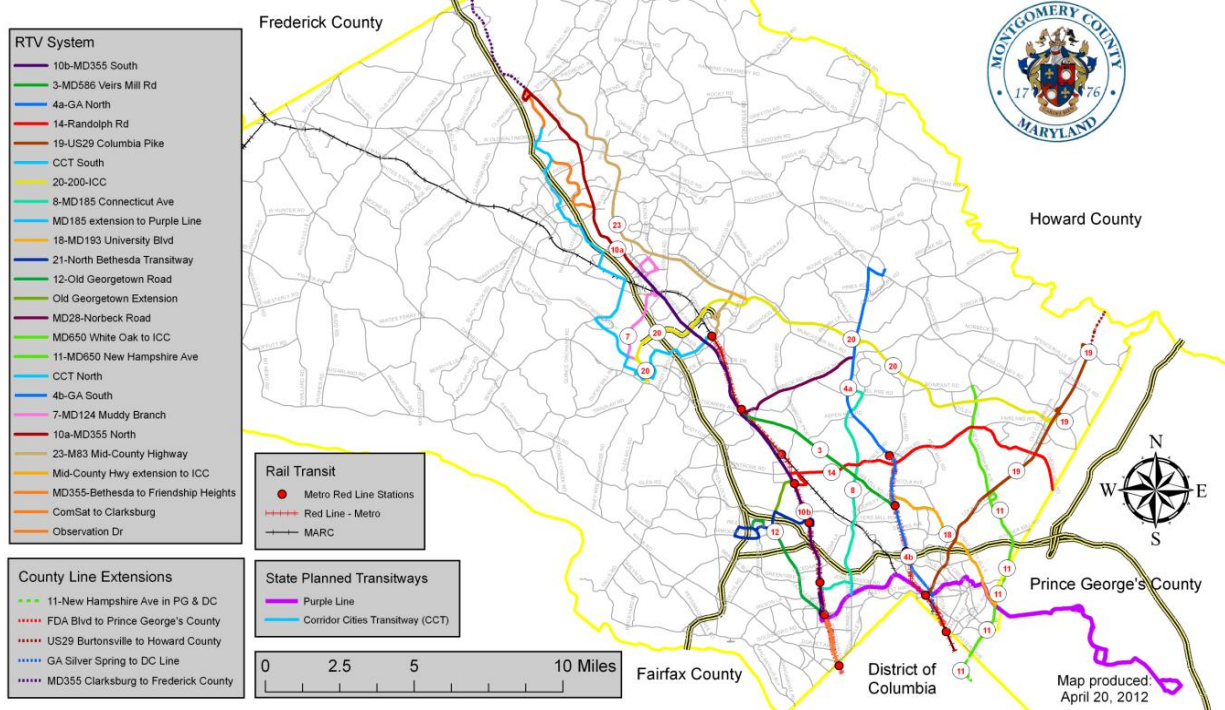


TOTAL MILES OF ALL PHASES: ~161.5 miles³²

³¹ Of the 42.0 miles in Phase Three, only 28.6 would be constructed until a decision is made to construct M83 Mid County Highway, at which time that RTV corridor would also be built.

³² Group D developed a corridor proposal that was adopted by the Task Force with total corridor miles of 162.5. To this amount must be added the CCT at 15.0 miles, and from which must be subtracted 13.4 miles for M83 which, while part of the network may be built in the future if the road is built, and 5.3 miles of the Rockville Town Center to Life Sciences segment, which has been determined to be better served by other transit service. This yields a total net mileage of 158.8. This must be compared with the mileage included in the PB Study, which when the same elements as above are added and subtracted from the original 148.3 miles of corridor length in the PB Study yields 144.6 total net miles. The net difference between 158.8 miles and 144.6 miles is 14.2 net miles. The total mileage of the entire RTV system would be 161.5 miles, and there would be 135.9 miles of new construction, including the CCT.

Transit Task Force Full Rapid Transit System



Among the range of options the Task Force recognizes may be considered by the County's decision-makers is possibility that the construction of all the routes may need to be extended in time in order to defer some of the construction costs. The Task Force strongly opposes such a deferral, because any delay in the full build-out of the entire network jeopardizes the eventual cost-efficiency and optimal operational integrity of the proposed RTV system.

An example of the differential of effectiveness of a partial system versus the substantially completed full build-out is the recent experience with the phased opening of the ICC. When the first phase of the ICC was opened for traffic, the route was only from I-270 to Georgia Avenue (Norbeck Road). Very little use was made of such an incomplete segment. But, once the next phase of the ICC was opened from Georgia Avenue to I-95, the use of the ICC grew geometrically in proportion to the additional percentage increase of the route segment. This same phenomenon would be experienced for as long as the RTV network is only partially constructed. To delay completion in this fashion is likely to be cost-inefficient, and operationally compromised. It would delay the expansive reach of the network for customer service. In short, minimizing delays in completion would increase utility and cost-effectiveness for each additional phase.

D. Operational Technology and Storage and Maintenance Facilities

1. Operational Command Center and Technology Needs for Operations

Customer service excellence and efficient operations of a transit system is dependent on the quality, availability and usability of information communicated to and from central control centers. The Task Force envisions utilization of such a center in the proposed integrated RTV system and extensive use of technology to ensure that the system experiences optimal operational efficiency and safety, and that customers readily have the information they need to have a “best in class” experience when using the system. The technology used by such a center and the system in general should enable the transit operating agency a holistic and transparent view of operational data for all in-service vehicles, and to manage information from multiple systems providing the critical information and support for planners, dispatchers and service personnel of transportation operators and transit authorities.

Montgomery County already has a great start in creating such a critical operations management center and utilization of the advanced technology needed to provide patrons a “best in class” experience. The MCDOT’s Transportation Management Center (“TMC”) performs almost all of the above referenced operations management functions for the county’s Ride-On system, with the exception of capabilities such as signal prioritization and signal pre-emption. Also, although it does not yet have the capability, the TMC is planning to roll out “next bus” technology in the near future. These later referenced functions are essential if the proposed RTV system is to provide a “best in class” experience for its riders.

Given the size of the investment already made by the County, if the proposed integrated RTV system is to be operated by an agency other than MCDOT, it will be essential to partner with MCDOT for operations management to make the best use of technology, optimize overall system performance, and create the best customer experience possible.

2. Need for Storage and Maintenance Facilities

An integral part of any RTV system is facilities to store, service and deploy vehicles to operate. Because rubberized tire RTV vehicles can operate on public roads, the location of a RTV depot allows greater flexibility than the location of a light rail yard and shops. Cost of operation and system reliability are critical factors in locating transit vehicle depots. The further from transit routes being serviced, the greater the

“deadheading” cost and the less service reliability. Both of these factors translate into more vehicles and drivers to operate vehicles based in poorly located bus depots. Additional travel time and distance add costs and involve traffic delays associated with the increased distance transit vehicles travel to assigned routes. The decision to build a depot is inseparable from that of building a RTV system. Without an effective and feasible site(s) to support RTV vehicles, a cost effective, well-run RTV system is not possible.

Depot location involves both technical and policy issues, both of which involve trade-offs and varying complexities. Policy issues relate to matters of need, benefit, impacts, and fiscal capacity and timing. On the technical side, RTV depot location relates to the area of service and existing depot locations, the size of the facility required, access to roadway arterials, environmental impact, and cost. Questions that need to be addressed in a technical feasibility review include: Can a suitable site be found in the target area? Does it meet operational needs? Can environmental and community impacts that may be identified be adequately mitigated? The broader policy issue comes basically down to the following question: Is the site acceptable to the community?

Under the MCDOT’s Division of Transit Services, Montgomery County currently operates some 360 buses on some 76 routes, providing a finer-grained transit network focusing on community feeders to Metrorail Stations compared to Metrobus, which provides 42 trunk-line routes. The only WMATA depot in Montgomery County is just east of the White Flint Metrorail Station. This facility can support up to 240 buses. Currently, 203 buses are assigned to this depot. Ride-On serves up to 28 million riders a year. On a daily basis that translates to some 90,000 riders. To support existing bus operations, Ride-On has three facilities: Brookville Depot less than a mile west of downtown Silver Spring, the Nicholson Court leased depot about a half mile east of the White Flint Metro Station and the Shady Grove Equipment and Maintenance Operation Center (“EMOC”), adjacent to the Shady Grove Metro Station. The Brookville Depot was recently expanded and has no additional expansion capacity. The Nicholson Court Depot is a leased facility that will be discontinued after the EMOC facility is relocated with expanded capacity. The Shady Grove EMOC facility is being relocated less than a mile to the north at what is known as the Casey 6 and 7 sites. The County has been pursuing a new North County bus depot near Clarksburg.

The 2008 Ride-On Transit Strategic Plan Update reported a 50% increase in ridership between 2000 and 2008. In this same report, transit ridership is projected to double by 2020. These projections are in line with Maryland Department of Transportation projections for transit ridership growth statewide. Looking at just Ride-On service, overall bus depot capacity needs to expand from 360 buses to 600 buses to accommodate this growth. This bus vehicle expansion does not include depot capacity for either the CCT, which if built as an RTV line will require a depot with a 174 ultimate vehicle capacity, or a Countywide RTV system. To meet this demand for regular Ride-On service, a new and expanded EMOC depot as well as new North County depot will be required. The Transit Task Force estimates that to support its proposed system, a depot that supports 250 vehicles will be required. Additional analysis will be needed to refine this estimate. That analysis will assess the RTV's effect on the Ride-On system, as new RTV routes will result in a decreased demand for Ride-On service. RTV routes are proposed for corridors with existing Ride-On service.

Thus, many Ride-On riders will shift to the rail-like RTV service, decreasing the demand for Ride-On vehicles. Projecting the level of such ridership shifting and vehicle need requires further analysis. The study will also estimate fleet mix: 40 foot, 60 foot, or even larger articulated vehicles. Standard 40-foot vehicles can be assigned to routes with lower passenger counts, while the more cost-effective 60-foot long or larger vehicles can be used on the routes with heavy passenger ridership. Finally, the study will assess likely deployment of Ride-On and RTV vehicles among all County depots. As both Ride-On and RTV services will be Countywide, deployment across County depots will reduce deadheading and increasing efficiency. However, this allocation analysis would not likely change the projected total need. Since Ride-On depots are so unevenly distributed, MCDOT identified three areas in the eastern portion of the County to search for RTV depot sites. These areas took into consideration the location of existing and planned depots, as well as the Countywide distribution of proposed RTV routes, access speed of County roadways, and deadheading. Forty-six sites were identified. Sites tended to be rejected for multiple reasons, although a single factor could be grounds for rejection. Principal reasons for sites to be rejected were roadway access to key arterial highways and environmental constraints. Other reasons for rejection included incompatibility with adjacent land use, unacceptable parcel shape, and existing land use. As a result of a great deal of technical analysis and evaluation of the above referenced 46 sites, the Task Force

has included in its recommendations a site that is proposed to be used for a planned RTV maintenance-storage depot. The specific site is not identified for reasons of confidentiality in relation to the potential acquisition of real property.

E. Coordination and Integration with a Comprehensive Multi-Modal Transportation Network

1. “Pre-Wiring” the RTV System for Coordination and Integration with Other Modes of Transport

The Task Force recognizes that the RTV system will need to be integrated with other transit assets that operate within Montgomery County, as well as regional transit assets. Over time, if neighboring jurisdictions adopt similar approaches, this integration will become even more important. It is also very important to note that operation of the RTV system at the highest possible level of quality on a highway such as I-270 may only be possible with the planned lane expansion and re-configuration to “Electronic Toll Lanes” (“ETLs”) that is currently under study. Congestion alleviation on that important highway may be possible by careful integration of RTV service with increased express bus and similar services and techniques along such highways, for which expanded use of ETLs and variable “congestion pricing” on those lanes, similar to what is now on the ICC, holds great promise, and interaction with a Countywide RTV system should be considered as this project moves forward. While this is beyond the scope of work of the Task Force, and certainly is beyond the time and resources available to the Task Force, such coordination and integration is vital.

2. Coordination and Integration Metrorail Subway Stations

One of the many goals of the RTV system is to enable users to travel seamlessly from their homes to distant destinations, including those in other jurisdictions. While this may require change in modes or systems being used, the goal of the RTV system will be to bring such riders an easy, reliable and seamless experience. Thus, a person living at the perimeter of the RTV network in Montgomery County (but who does not live near a station on the Metrorail Subway system) who wishes to travel to a distant place outside of Montgomery County (e.g., District of Columbia, Prince George’s County, Northern Virginia) will be able to transfer with relative ease from the RTV system to the Metrorail system, and complete their trip on transit. Detailed planning of RTV system station location will need to take this into account.

3. Coordination and Integration with Purple Line Stations

In expanding the corridor network originally proposed in the PB Study, one of the important changes proposed by the Task Force is the extension of corridors to connect with stations along the Purple Line at four points (e.g., Bethesda, Chevy Chase Lake, Silver Spring and Langley Park). This is significant because it would allow users of the RTV system to link up with the Purple Line and achieve destinations only accessible from use of the Purple Line, as well as enabling riders of the Purple Line to expand the scope of destinations available to them by transit to various points in the County by use of the RTV system. While the Purple Line is a completely separate project, integration of this kind helps to accomplish the goal of a “comprehensive rapid transit system.”

4. Potential Redeployment of Ride-On

As the RTV System is developed changes will inevitably be required in the Ride-On Bus System and in the Metrobus System. As to Ride-On, that system will be gradually reconfigured to become a “feeder” system to the RTV System. The goal will be to minimize the distance any resident or worker needs to travel in order to reach the complete transit system – so as to encourage and facilitate use of the entire system, and the RTV network in particular. It must be understood that this reconfiguration of Ride-On will play out over a number of years as each phase of the RTV System is completed. Such a reconfiguration will occur, in the first instance, after extensive “operating optimization” studies are performed. These studies will be conducted both during the planning phase at the outset of work on the project, and through development as additional phases come “on-line.” The Task Force urges that these studies commence immediately (at least for the proposed Phase One). Obviously, additional changes will occur, based on observation and actual operational experience. It is impossible to specifically predict the changes in Ride-On. However, MCDOT has informally predicted that this could result in the reduction of the use of approximately 100 buses from the Ride-On system. This will decrease Ride-On operating costs.

Thus reconfigured, Ride-On will enable the comprehensive transit system to accomplish the goal of any successful comprehensive, well-integrated transit system: bringing transit within the shortest feasible distance of where people live and work. The redeployment of Ride-On will be accomplished after extensive operational optimization studies during the RTV planning stage.

5. Potential Modifications of Metrobus Routes

With regard to the Metrobus System, while we cannot predict or control the changes that will occur, it seems to the Task Force that given the fact that the RTV network traverses lines that are now served by WMATA Bus, such service will be able to be discontinued or substantially modified. It should be noted that if this results in a reduction of WMATA Bus service there will be a basis for the State of Maryland to reduce its monetary contribution to WMATA for this purpose. It is impossible to specifically predict the changes in Metrobus operations; however, identification of the RTV corridors is a starting point for this analysis.

The elimination, reduction or redeployment of Metrobus in specified corridors will only be accomplished after careful planning as the new RTV and Ride-On services are phased-in during the period of development and initial operation of the RTV system.

6. Coordination and Integration with Additional Modes of Travel

As is the case with the other transit assets identified above, integration of the RTV system with other modes of travel will be important and can be very beneficial. One example is local circulator services. Not only will such existing services be integrated into the RTV system, the existence of the RTV system may encourage development of other circulator and shuttle services by local business districts and employers.

Another example is the use of bicycles. To the extent possible, bicycle racks will undoubtedly be placed at all RTV stations to facilitate use of the system by bicyclists. Also, designers will study how to enable bicyclists to bring their bicycles with them on RTVs, without causing delay or disruption in RTV service.

As an aside, the very existence of an RTV system may diminish the number of people who feel the need to own their own cars, and this could also lead to more car sharing, car pools, and the use of services such as “Zipcars” and bike sharing.

IV. CONSTRAINTS ON IMPLEMENTATION

A. Physical Constraints

As noted elsewhere in this Report, the construction of the RTV system faces a number of physical constraints. There is limited available right-of-way. Mature neighborhoods and road corridors have extensive utilities both in the streets and in sidewalks and other areas along the streets, the relocation of which is complex, potentially very expensive and time consuming. While capital cost estimates provided below have included a contingency for utilities, until more detailed engineering work is performed, we cannot know the extent of the need to provide for utilities.

This endeavor will not be worth pursuing, if it must be based upon the otherwise appealing desire “to be all things to all people everywhere and at all times.” The natural political pressures, of course, can often motivate some to declare that they have devised a “creative solution” that requires little to no investment or sacrifice by anyone, and can miraculously accommodate the (often competing) interests of everyone. But, too often, such miraculous programs turn out to be simply artifice.

As with any real, effective, efficient, and *sustainable* program, particularly a program that seeks to correct a long-standing problem, this transformational RTV network initiative makes no such promise. Rather, candor requires that we recognize that this RTV system will require shared investment and some shared sacrifice, in some places, and during some points in time, in order to most strategically, effectively, efficiently, and *sustainably* accommodate the pressing needs of our community that will be met, or significantly contributed to, by the proposed RTV system. However, the investment and sacrifice will be worthwhile – and our community will look back with pride on the fortitude of the community, as well as its elected officials and other policy-makers, in adopting the proposals made in this Report.

B. Environmental Constraints

The RTV system proposed by the Task Force raises some environmental constraints which would need to be addressed in the course of seeking federal and state construction permits. Three components of the RTV system would trigger these reviews:

- Paving vegetated median strips to create dedicated RTV lanes or guideways could potentially cause more stormwater runoff which would lead to environmental review and, if shown to have a negative impact, adoption of mitigation plans.

- *New* construction of dedicated lanes or guideways that cross wetlands or waterways in the County would trigger environmental review (but it appears that running RTVs on existing bridges and overpasses that are not modified to accommodate RTVs would not trigger such review).
- *New* storage and maintenance facilities for RTVs would need to comply with the County's stormwater management permit Municipal Separate Storm Sewer System ("MS4") and, depending on where they are located, would also need to be evaluated for their impact on wetlands and waterways.

The National Environmental Policy Act (NEPA) applies to any project that receives significant federal funding or requires a Federal permit (e.g. a wetlands disturbance permit). Thus, NEPA would come into play if Montgomery County sought federal funds to build the RTV system, or to purchase vehicles, or if any of the proposed routes involve new construction that could impact wetlands or waterways and therefore would require a federal permit.

There are three possible outcomes to a NEPA review.

- Categorical exclusion. The review concludes the project will have minimal environmental impact and no further analysis is required. This is highly unlikely given the size of the system the Task Force is proposing and an environmental assessment would need to be done.
- Environment Assessment concludes that the proposed RTV system has "no significant impact."
- Environmental impact statement (EIS) is required. The environmental assessment concludes that a full-scale EIS needs to be done. An EIS can take several years to complete as it identifies environmental impact and suggests reasonable alternatives that would minimize negative impact.

In order to construct the proposed RTV system, Montgomery County would need to apply to the state of Maryland for permits that require an environmental assessment before they can be issued. Included would be:

- Various discharge permits that stipulate how stormwater runoff would be controlled during construction.
- Construction permits that require an examination of the project's impact on wetlands and waterways before they can be issued.

- Maryland’s stormwater management regulatory program requires that new construction incorporate environmental site design techniques that increase the amount of rain water that remains on site. As a result, the new storage and maintenance facilities needed for the RTV system would have to incorporate environmental site design techniques. But because there are no clear precedents for how these regulations apply to linear projects (like dedicated bus lanes or guideways), the extent to which stormwater runoff mitigation techniques would be required under this regulatory program for this part of the RTV system is unclear. Nevertheless, the construction of dedicated RTV lanes and stations in road medians presents an opportunity to improve the stormwater retention capacity of these roads at the same time.

C. Regulatory Constraints

1. Existing “Complete Street” Policies

Those developing the RTV system will need to work closely with Maryland State Highway Administration (“SHA”) and MCDOT in balancing the variety of interests involved in determining how to best use available road right-of-way area to accommodate reasonable complete street policies in the context of implementation of the RTV system.

2. Other Existing Land Use and Development Policies

Those developing the RTV system will need to work closely with the Planning Board and other groups involved in preparing and implementing land use and development policies. The need to comply with other legal, policy and regulatory requirements are discussed below.

D. Institutional Constraints

1. Multiple Agencies Involved with Multiple Missions

A number of State and local agencies have a role in various aspects of the determination whether and how to implement an RTV system. Once threshold decisions to move ahead have been made, these same agencies will play some role.

SHA is the agency charged with the design, construction and maintenance of state roads, and of regulating the use thereof. The lion’s share of the route mileage of the proposed RTV system would operate within State road right-of-way. Thus, the County will need to enter into one or more use agreements and related documents in order to develop and operate the proposed RTV system. SHA has participated in the work of the

Task Force, including making constructive comments and observations on the preliminary concept plan developed by TTG for the Task Force. The SHA has been generally supportive of the Task Force's efforts.

The Maryland Transit Administration ("MTA") of MDOT is the agency charged with the design, construction and maintenance of the transit facilities of the State. In Montgomery County, MTA is managing the design and construction of the Purple Line, and is pursuing a Federal New Start grant from FTA to help fund these activities. Additionally, to date, the CCT project has been planned under the auspices of MTA. Initially, the County's locally preferred alternative ("LPA") for the CCT was the light rail transit mode. Recently, the County Executive and County Council changed their recommendation for the LPA to the "BRT" mode. The County is awaiting action by the Governor on this recommendation.

MCDOT has been the County department with primary responsibility over planning for a BRT system. It commissioned the original PB Study and has actively participated in the work of the Task Force. MCDOT has general responsibility over the design, construction and maintenance of certain roads within the County, manages the Ride-On bus system, and has other responsibilities.

The Montgomery County Planning Board (the "Planning Board"), among other authorities and responsibilities, is the principal advisor to the County Council with respect to amending the Master Plan of Highways and Transitways, and functional plans relating thereto ("MPOH"). In connection with possible amendment of the MPOH, the Planning Board's staff is performing a detailed study with the assistance of consultant Parsons Brinckerhoff that should result in submission to the Council of proposed amendment to the MPOH by the end of calendar 2013. Representatives of the Planning Board have served on the Task Force, ex officio, and staff members have attended meetings of the Task Force and participated in numerous discussions. Advice given by the Planning Board to the Council is expected to have a significant influence on final decisions to be made about the reservation of potential right-of-way requirements, RTV corridor selection and the configuration of treatments within right-of-way.

The County's Department of General Services as well as MCDOT and SHA may be involved in real property procurements relating to the RTV system, as well as other procurements. Similarly, the County's Department of Technology Services may be

involved in developing specifications for the purchase of information and fare collection technology systems, as well as vehicle and signalization control technology.

If the County moves ahead with development, a variety of State and local permits will be required. The County's Department of Permitting Services, the State's Department of the Environment, and other agencies will be involved in these processes.

Against this backdrop of complex inter-agency involvement and interaction, the Task Force has recommended that the County explore the necessity and wisdom of having a single-focused, quasi-independent authority created for the purpose of coordinating with all of the above agencies and having primary responsibility to plan, design, construct, finance, operate and maintain County transit functions, including RTV.

2. Need for a Streamlined Process

To complete design and construction of the proposed RTV system within the schedule suggested by the Task Force, a streamlined process will need to be adopted. In Part V below, this Report discusses how design-build/operate-maintain contracting techniques may be used to achieve certain efficiencies. In addition, streamlined decision-making processes need to be adopted for efficient development. Public participation in comments on planning activities should be undertaken at the earliest possible time and be clearly defined. Maximum effective public participation will be an integral part of the planning process and established procedures should clearly define the point at which decisions have finality and planning shifts to implementation.

D. Financial Constraints

1. The Age of Severely Limited Government Resources

The primary challenge regarding the development of a workable financing plan for the RTV System is that we live in a time of serious fiscal constraints, if not downright austerity, at each level of government. Traditionally, major infrastructure projects are funded, at least in part if not to a major degree, by the federal government. While we may believe that the federal government should adopt more far reaching infrastructure finance programs, it is barely able to keep up with maintenance and already pending capital projects, much less embark on a new program to develop extensive transit infrastructure. At least there is little reason for optimism that it will do so in the near future. The implication of this finding is that the lion's share of funding for a system such as the one proposed herein will have to come from the State and local levels.

2. The Need for Creative Revenue Sources and Uses

Given the existing economic and budgetary profile and challenges, it has become clear to the Task Force that traditional approaches will not allow for needed advances. Reliance on Federal “New Starts” funding through the United States Department of Transportation (“USDOT”) would be misplaced for this project. Furthermore, it would undermine efforts to obtain Federal funding for pre-existing programs, such as The Purple Line and the CCT. While there may be avenues for some Federal assistance, we should not delude ourselves to believe that it will be available in sufficient amount or in a reasonable time to meet our needs. The County cannot and should not allow its destiny to be controlled by federal funding programs that were not intended to address the kind of comprehensive program the Task Force is proposing, and that are underfunded in any event.

There are numerous competing needs for the State’s Transportation Trust Fund resources. Historically, the Trust Fund has not used leverage as a method for expanding its capabilities and more efficiently using its capital³³.

The Task Force believes it has developed a new approach to infrastructure funding, which combines use of State and local resources to implement an extraordinary public works projects. It combines an increasing annual contribution from the state with dedicated payments derived from real estate taxes imposed within special taxing districts to defray capital costs and operating deficits of the RTV System.

³³ Only 7% of the total revenues sourced for the Trust Fund come from the proceeds of debt issuances, and only 5% of the total expenses of the Trust Fund are spent on debt service. Maryland Department of Transportation, Consolidated Transportation Program.

V. THE RECOMMENDED IMPLEMENTATION APPROACH

A. Development Methodology

1. Expeditious and Cost-Effective Development

During its deliberations, the Task Force, either as a full body, or in its various working groups, discussed the need for development processes for the proposed RTV system that results in shortest possible design and construction period, while providing the necessary safeguards against improper procurement practices. The need for streamlined procurement processes for operations and maintenance activities were discussed as well. The Task Force recommends that, regardless of whether the proposed RTV system is implemented within existing agencies or within a new single purpose transit agency yet to be created, the procurement processes need to be the most efficient possible. As described in the Section which follows, the Task Force recommends that serious consideration be given to some form of public/private partnership (“P3”). There is a broad spectrum of possible models of P3s that could be considered. Design-Build (“DB”) is a model in which the private sector designs and builds infrastructure to meet public sector performance specifications, often (though not necessarily) for a guaranteed price, so that the risk of cost overruns is transferred to the private sector party. Other models include Operation and Maintenance contract (“O&M”), Design-Build-Finance (“DBF”), Design-Build-Finance-Operate (“DBFO”), Build-Own-Operate (“BOO”), Build-Own-Operate-Transfer (“BOOT”), and Operating License.

After reviewing what it believes to be the primary P3 options, the Task Force recommends that the County consider utilization of a design-build (“DB”) process for development of the system, or perhaps even a design, build, operate and maintain (“DBOM”) approach for both system development and operations and maintenance. DB and DBOM processes allow for a streamlined procurement process for multiple stages of an infrastructure project. The Task Force heard presentations on how different types of public/private partnerships have helped achieve these objectives in a number of jurisdictions around the country. The Task Force concluded that given the nature of the transit assets proposed to be created in this Report, a realistic business model for a “public-private partnership” does not involve private sector ownership and legal control over the system’s primary assets. The only exception to this would be a narrow one in the event legal ownership is required to be conveyed pursuant to a financing arrangement (for example, if a private investor group were to buy the rolling stock of the system and

lease it back to the owning agency). The owning agency should not be in a position where it does not have control over the vehicles, the maintenance and storage facilities nor the transitways themselves.

Regardless of whether or not the above referenced procurement processes are utilized, much can be done to improve current processes. First, it is recommended that a dedicated inter-departmental team be formed within the organization that is ultimately given the responsibility to develop, operate and maintain the proposed system, to better track the status of various solicitation documents as they move from the internal development stage to issuance, staff review and approval. It is not uncommon in many governments for the solicitation processes to be slowed considerably due to the fact that there is a lack of ownership during the internal solicitation development process. Another reason for this is that staff involved in the process often have multiple responsibilities that may result in a lack of focus on what may be a high priority initiative lengthening the procurement cycle for an important project.

Still further is the underutilization of automated tools that can help expedite the procurement process. Metropolitan Washington Council of Governments (“MWCOC”) recently initiated an automatic solicitation notification system where interested vendors automatically receive bid documents from MWCOC for which they may have interest. This accomplishes several objectives for the government agency; (a) faster delivery of documents to the vendor community; (b) greater market awareness of a business opportunity and; (c) a reduced cost of solicitation issuance (less paper, postage and preparation costs). Greater market awareness often results in greater competition and better pricing for the government agency.

It is also recommended that an interdepartmental team be formed within the Executive Branch of the Montgomery County Government to coordinate and manage all permitting and other processes that impact the planning, design and construction of the RTV system to not only ensure compliance – but timely and efficient implementation as well.

The need is clear for different business and procurement processes than those currently in use generally by most governments. Without such change the cost to engage and manage the required resources to design, build, operate and maintain a “best in class” RTV system may be significantly higher than need be.

By proposing a public-private partnership, increasing staff capacity to track solicitation documents, and advising the County to embrace the use of automated tools, the Task Force believes the County can create a significantly improved RTV development process and more cost effective system operations.

2. Designing/Building/Operating/Maintaining

Montgomery County has almost exclusively used traditional project development methods to design, build, operate and maintain public infrastructure. The Task Force recommends that the County develop the proposed integrated RTV system using some combination of P3s.

Design-Build

The DB structure allocates the responsibilities and associated risks of design and construction, based on public specifications, to the private sector. The design-build form of project delivery is a system of contracting whereby one entity performs both architectural/engineering and construction under one single contract (operations and maintenance activities are either performed by a governmental agency, or contracted by the governmental agency to a private party through a separate solicitation.) Under this arrangement, the design-builder warrants to the contracting agency that it will produce design documents that are complete and free from error (design-builder takes the risk). The selection process under design-build contracting can be in the form of a negotiated process involving one or more contractors, or a competitive process based on some combination of price, duration, and proposer qualifications. Often, the solicitation process is comprised of two steps. In the first, firms, or teams of firms are asked to submit their qualifications to complete the work described in the government agency's solicitation. From this step, a short list of proposers are selected to respond to a more detailed solicitation where the government agency asks for a detailed description of each proposer's approach and pricing to design and build the project. Portions of the overall design or construction work can be performed by the design-build entity or subcontracted out to other companies that may or may not be part of the initial design-build team. This is beneficial because the private sector is able to move through these processes faster than the public sector, because their procurement process for major purchases is much simpler, and they also often have access to more efficient resources and equipment, again speeding up the construction process. Another advantage for the private sector is in innovation and project management. The principle advantages of the DB approach are:

Single source of accountability – The design build approach provides a single source for the entire project. In the classic design-bid-build method the government entity must:

1. Select an architect / designer
2. Finalize the design
3. Bid the project
4. Select a contractor, and act as an intermediary

This traditional approach is almost always longer and more complicated than the DB approach because of the multiple solicitation documents that have to be prepared (one for design, and then one for construction). The design-build method fosters teamwork and lends itself to cooperation. The relationship built during the design phase helps to ensure that the stage is set for a successful construction project.

Budget management – Discussing budget during the design phase (not waiting until the bids come in) helps to keep a project within a realistic budget. Communicating the cost implications of design decisions ensures that the government owner plays a key role in arriving at the final project price. In this connection, it is vital that the “owner” make clear the pricing parameters for each portion of the project and that the owner, in arriving at a scope of work, work with the design-builder in a way that conforms to these parameters. Once the scope of work has been finalized, the project costs are clearly defined and controlled by the design-build firm.

Enhanced communication – Specific design and construction details are being developed throughout the entire process and the focus stays on “value” to the government owner. The communication benefits of working with a construction expert and design professional at the same time ensures that potential problems are discovered before the project starts.

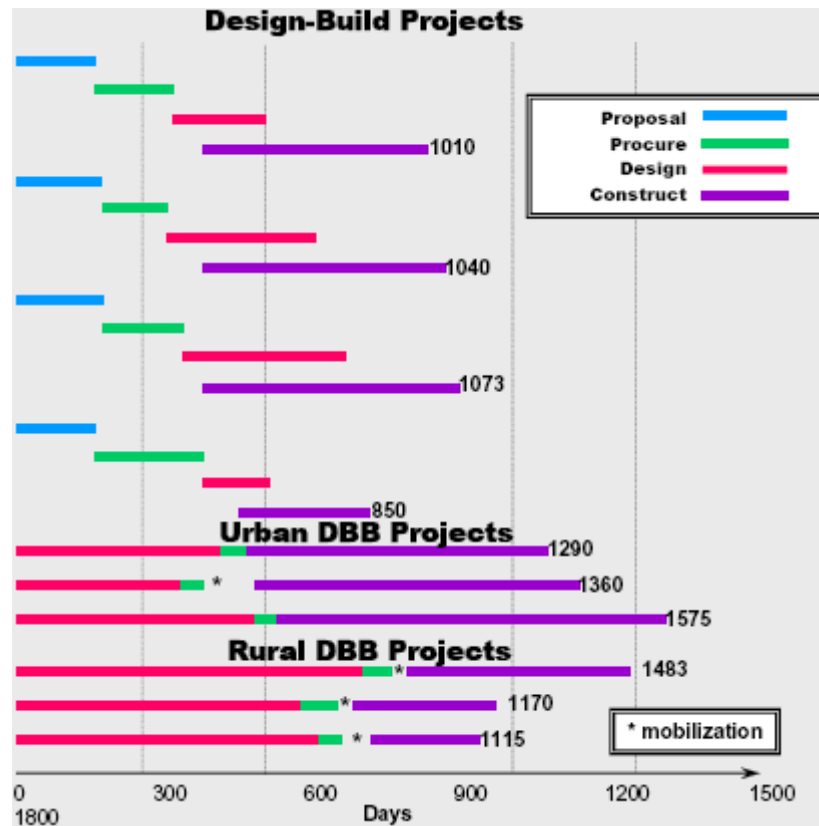
Faster project completion – Design-build projects can be completed in a shorter amount of time because bid time is reduced, scheduling for the project can begin before design is finalized, potential construction problems are uncovered early and enhanced communication keeps everything moving.

Quality Control – The design build method helps to remove ambiguity that may arise in material and construction specifications. Since the designer, engineer and builder are from the same firm, the focus remains on protecting the client’s interest.

Because of its inherent flexibility, design-build lends itself well to a variety of project types. By combining design and construction experience onto one team, the government “owner” realizes the benefits of “one stop shopping” at its best. The DB process is widely considered more efficient and effective than the traditional design-bid-build form of project delivery whereby the contracting agency either performs the design work in-house or engages an engineering design firm through a competitive process to prepare drawings and specifications under a design services contract, and then separately contracts for at-risk construction by engaging a contractor through competitive bidding. Under this arrangement, the contracting agency warrants to the contractor that the drawings and specifications are complete and free from error (contracting agency takes the risk). The selection process for design-bid-build is usually based on a separate competitive process for the design contract and lowest responsible bid for the construction contract. A design-build study performed by the Arizona Department of Transportation for the U.S. Department of Transportation’s Federal Highway Administration documents the time savings that are typical from utilizing this development process. A table from the study summarizing an analysis of several projects in Arizona is shown below. Exhibit II.1 shows the actual project timelines for a number of comparable design-build and design-bid-build projects documented by the Arizona Department of Transportation in 2004. Although the data for the design-bid-build projects omit the time to develop and procure design contracts for these projects, the design-build projects still have shorter delivery times, especially for urban projects. This below chart illustrates the effect of concurrent sequencing of project development phases for design-build projects versus consecutive sequencing of these phases for design-bid-build projects³⁴.

³⁴ Ernzen, Jim, Williams, Ron, and Brisk, Debra: Arizona Department of Transportation. *Design-Build vs. Design-Bid-Build: Comparing Cost and Schedule*. Excerpted from a presentation made at the 2004 Annual Meeting of the Transportation Research Board, Washington, D.C., January 2004.

Graph 3: Project Timelines for Comparable D-B and D-B-B Projects



Source: Arizona Department of Transportation

Critics of the design–build approach claim that the design–build technique limits the clients’ involvements in the design and allege that contractors often make design decisions outside their area of expertise. They also suggest that a designer—rather than a construction professional—is a better advocate for the client or project owner and/or that by representing different perspectives and remaining in their separate spheres, designers and builders ultimately create better buildings³⁵.

Design-Build-Operate-Maintain

The DBOM structure, logically, attributes the responsibilities and risks of design, construction, operation and maintenance to the private sector, while leaving the financing aspect to the public sector. The public sector’s access to tax-exempt, lower-interest financing options lowers the overall project cost. There may be occurrences where some private sector funding is required, which will be discussed in the next section.

A primary advantage of the DBOM approach is that it combines responsibility for usually disparate functions - design, construction, operation and maintenance - under a

³⁵ Wikipedia, <http://en.wikipedia.org/wiki/Design%E2%80%93build>

single entity. This allows the private partners to take advantage of a number of efficiencies. The project design can be tailored to the construction equipment and materials that will be used. In addition, the DBOM team is also required to establish a long-term maintenance program upfront, together with estimates of the associated costs. The team's detailed knowledge of the project design and the materials utilized allows it to develop a tailored maintenance plan that anticipates and addresses needs as they occur, thereby reducing the risk that issues will go unnoticed or unattended and then deteriorate into much more costly problems.

The benefits of "life cycle costing" are particularly important, as most infrastructure owners spend more money maintaining their systems than on expansion. In addition, the life-cycle approach removes important maintenance issues from the political vagaries affecting many maintenance budgets, with owners often not knowing how much funding will be available to them from year to year. In such cases, they are often forced to spend what money they do have on the most pressing maintenance needs rather than a more rational and cost-effective, preventive approach.

Government entities award DBOM contracts by competitive bid following a transparent, competitive procurement process. Proposers respond to the specifications provided in the solicitation documents and are usually required to provide a single price for the design, construction and maintenance of the facility for whatever period of time is specified. Proposers are also required to submit documentation on their qualifications, thereby allowing owners to compare the costs of the different offers and the ability of the proposers to meet their specified needs.

While the potential exists to reap substantial rewards by utilizing the integrated DBOM approach, government entities which are not accustomed to this approach must take great care to specify all standards to which they want their facilities designed, constructed, and maintained. With a DBOM procurement, owners relinquish much of the control they typically possess with more traditional project delivery. Unless needs are clearly identified up front as overall project specifications, they will not generally be met. This is important, because from design through operation, DBOM contracts can extend for periods of up to 20 years or more.

This DBOM structure has been utilized for the New Jersey Hudson-Bergen Light Rail (LRT) line, a 20.6-mile project with 24 stations and a capital cost of \$2.3 billion.

The project was implemented in phases. A DBOM 15-year fixed price contract was initiated in 1996 to design and construct a 9.5-mile first phase of the project, Minimum Operating Segment (“MOS-I”), with a guaranteed completion date, provide a fleet of light rail vehicles, and to operate and maintain the system for 15 years. This initial contract only covered the first segment; however it was later renegotiated to include subsequent extensions. The project was funded from FTA New Starts Full Funding Grant Agreements, Grant Anticipation Notes (“GANs”) (backed by passenger fares), and State Transportation Trust Fund (motor fuel tax receipts).

Design-Build-Finance-Operate-Maintain

The Design-Build-Finance-Operate Maintain (DBFOM) approach is one where the responsibilities for designing, building, financing and operating are bundled together and transferred from public sector entities to private sector partners. There is a great deal of variety in DBFOM arrangements in the United States, and especially the degree to which financial responsibilities are actually transferred to the private sector. One commonality that cuts across all DBFOM projects is that they are either partly or wholly financed by debt leveraging revenue streams dedicated to the project. Direct user fees (tolls) are the most common revenue source. However, there are others ranging from lease payments to shadow tolls and vehicle registration fees. Future revenues are leveraged to issue bonds or other debt that provide funds for capital and project development costs. They are also often supplemented by public sector grants in the form of money or contributions in kind, such as right-of-way. In certain cases, private partners may be required to make equity investments as well.

In the United States, another point of departure among DBFOM arrangements is the range of organizations that can function as the sponsor. Sponsoring agencies can include various types of governmental units including general governments, departments of transportation, toll authorities; and public benefit corporations. In Europe, Latin America, and Asia, where the DBFOM approach is commonly used to develop new toll road projects, the debt is usually raised by private concession companies who are fully responsible for designing, building, financing, and operating the projects. Given the ability of public sector agencies in the United States to issue low-interest tax-free debt, it is often more cost-effective for public project sponsors to issue debt than their private sector partners. Because of this, public project sponsors using the DBFOM approach in the United States often issue project debt themselves, but rely on their private partners to

study the different options for doing so as to recommend a final financing package. In such cases, the revenue risk may be passed on to the private partner or retained by the public project sponsor.

One major example of a DBFOM project is the Capital Beltway project with the Virginia DOT. This \$1.938 billion project created High-Occupancy Toll (HOT) lanes (two in each direction) on I-495 in Virginia, where buses, carpools, and emergency vehicles could use for the HOT lanes without charge, while vehicles with fewer than three occupants pay a toll to use the lanes. The timeline for operating is set at 80 years, plus 5 years for designing and constructing. The project is being funded by \$589 million in private activity bonds, a \$589 million TIFIA Loan, a \$409 million Virginia grant, and \$350 in private equity. TIFIA interest payments are expected to begin in 2018. Loan repayments are scheduled to begin in 2033 and conclude in 2047. The TIFIA loan is structured with five years of capitalized interest during construction followed by five years of partially capitalized interest during ramp-up; then current interest only for 15 years followed by 15 years of interest plus principal.

The DBFOM structure is not a good candidate for use for the proposed Montgomery County RTV system. Unlike toll road facilities (which is the most common type of project where the approach is used), fare box revenues are expected to cover only a small portion of total operating costs, thus not creating the future revenue streams needed to cover all operating expenses and debt service. Absent a sufficient future revenue stream to leverage, this approach is not practical.

As mentioned above, DBFOM is not a practical solution for the proposed RTV system and is not recommended. A DBFOM arrangement does not generate a sufficient future revenue stream to cover private sector debt service and operating costs, and does not allow the public sector (Montgomery County) to retain ownership and sufficient control of the project.

The DBOM alternative should be the first option for consideration. This option provides for maintaining public ownership and control over the project while taking advantage of certain private sector advantages. Although the majority of the proposed system should be funded through the issuance of public debt (perhaps some combination of County special tax district bonds, TIFIA (The Transportation Infrastructure Finance and Innovation Act) debt, some portion of the system (e.g. transit stations), may be funded by private sector contributions, and the RTV vehicles may most attractively be

financed using a commercial lease approach. Also, the best value for system maintenance and operations, including the maintenance/storage facility may be achieved through the use of a contract operator.

Should the recommendation to utilize a DBOM approach not be acceptable, an alternative would be that the County use a design/build (DB) option for development and construction, and then a conventional maintenance and operations scenario utilizing MCDOT, MTA, WMATA, or another public transportation agency that has yet to be created. In a number of examples around the country this approach has proven to shorten the period of construction, align the interests of the government owner, the design team and the construction team, and reduce overall development costs. Regardless of the P3 approach selected, it is the Task Force's opinion that, except in instances where decisions are made to lower costs by using a financial or tax advantage (e.g., commercial leases for rapid transit vehicles), the assets (e.g., stations, transitways, maintenance and storage facilities, and vehicles) in the RTV system should remain under public control.

B. Organizational Plan

The Task Force recommends that the County Executive and County Council explore the formation of a new, quasi-independent transit authority that would be responsible for the planning, design, engineering, financing, construction, operation and maintenance of the RTV System. The Task Force recognizes that this will require enactment of enabling legislation by the Maryland General Assembly; however, the Task Force believes the existence of such an agency is essential to the success of the effort to develop and operate a Countywide transit system. The Task Force finds that numerous other jurisdictions operating transit systems have agencies of this kind.

Among others, the reasons for this recommendation are that the agency charged with the development and operation of the RTV System, and its feeder systems, must: (1) have that responsibility as its sole focus; and (2) have flexibility in how it does business.

The new agency should have the authority to adopt specially customized contracting, personnel³⁶ and purchasing policies. While the enabling legislation for the new agency would maintain fundamental protections of taxpayers' money, it would also

³⁶ With respect to those categories of employees who are represented by a bargaining unit for the purpose of collective bargaining, the enabling legislation would require that the Authority honor such collective bargaining arrangements both as to those current employees of the County who are employed in such positions and whose employment may be transferred to the Authority, but also with respect to any new employees who may join the employ of the Authority thereafter in similar capacities to those who have transferred to the employ of the Authority.

provide for new ways in which to accomplish this goal – so that the proposed agency can perform its responsibilities in a manner that represents the best combination of characteristics of a private enterprise and a public agency. It is envisioned that the new agency would have independent authority in all policy matters except for those budgetary and financial matters which either require a change in tax rates, an appropriation of general funds, or the issuance of debt, which would be subject to the review and approval of the County Executive and County Council.

The Task Force recognizes that a variety of transition issues will need to be addressed in connection with this proposal. It recommends that the County Executive and County Council designate appropriate personnel and resources to determine if such an organization is the best way to plan, design, engineer, finance, construct, operate and maintain such a system.

VI. FINANCIAL PLAN

A. General Considerations

In considering a financial plan for the RTV system, the Task Force has, first and foremost, been focused on advising the County Executive and other decision-makers on the most feasible structure for funding the project. The Task Force has also considered various detailed elements of capital investment and operating expenses of the proposed RTV system, and will address and give guidance on these subjects to the extent practicable.

In reviewing this Part of the Report, readers are urged to focus primarily on the *structure* of the financial plan, and that any specific capital investment data should be viewed as illustrative of potential costs, and not hard estimates. The Task Force's goal in producing capital investment numbers is to present an order of magnitude, and to allow decision-makers to see how costs at that level would play out within the structure of the financial plan presented below.

The Task Force believes that what is presented in this Part of the Report represents an innovative approach to funding and financing that gives the County Executive, County Council and other decision-makers a broad range of choices that balance cost to the taxpayer against the need to address an urgent problem and to quickly achieve the many benefits to the County and State of building the proposed system: One that uses State and local resources effectively and in the public interest. If the County makes the necessary reasonable short term investment in further planning for the RTV system, the proposed project may move ahead without losing any time, while our political institutions work out a resolution to the difficult issues with which they are presented relating to transportation and other matters.

B. Proposed Financing Structure

The Task Force recommends that the capital costs of the proposed RTV system be primarily financed by debt, the debt service on which is proposed to be paid by the revenue sources described below. A 30 year maturity of the debt issued for permanent financing is recommended because that period corresponds with the weighted average

useful life of the assets being put in service, and it is appropriate to spread the obligation to pay for such assets over their useful life³⁷.

The Task Force proposes that debt service on the debt be paid from a combination of local and State revenue sources. Given the significant constraints facing the FTA's New Starts and Small Starts programs and uncertain future funding prospects, Federal funds were not considered by the Task Force³⁸.

In reviewing a range of potential sources of revenue to pay for capital and operating costs, the Finance Working Group was concerned not only that an adequate source of revenue was adopted as the mechanism to produce income, but also that the source be reliable and with as little fluctuation as possible throughout the life of the bonds. Revenue sources that were perceived as more volatile and that were relatively small in their ability to generate revenue substantial enough to meet the local obligation to fund debt service were discarded. Bond rating agencies and investors focus on these issues – and finding a reliable and stable source is vital. Furthermore, the County has legal constraints which limit the real alternatives.

The local revenue source selected by the Task Force would primarily be derived from a special *ad valorem* real property tax raised from within defined geographic special taxing districts. While they will be described in more detail below, one group of possible special taxing districts relating to the capital portion of revenues required encompass a geographic area within ½ mile of the RTV corridors. Several alternative scenarios are presented below which illustrate how such a special tax would work.

³⁷ While this bond maturity is different from the maturity period customarily used by the County, such a duration is permitted by law and, based on the preliminary work that our financial advisor performed for the Finance Working Group of the Task Force, it appears that adopting the 30 year maturity conforms with Federal tax law requirements concerning the relationship between the average weighted average useful life of the assets being financed and the weighted average life of the bonds. The Task Force believes that spreading the cost of the proposed system over such a period is equitable and appropriate, and it improves the affordability of the system.

³⁸ This conclusion does not mean that the Task Force would exclude Federal assistance. Nor does it mean that if the CCT can successfully compete for Federal funding that those funds should not be pursued and, if obtained, welcomed. The point being made here is that the whole nature of the New Starts and Small Starts programs focuses on a corridor-by-corridor approach to evaluating applications. This puts potential applicants like the County at a significant disadvantage. The Task Force seeks development of a comprehensive system. Furthermore, for competitive and other reasons, it is unlikely that the New Starts program as presently constituted would even consider sharing in the cost of a comprehensive, multi-corridor system being developed at the same time.

The State revenue source would be from an annual contribution from the State Transportation Trust Fund throughout the period when the bonds are outstanding³⁹. The rationale for this State contribution is as follows:

1. The State has already undertaken to serve as sponsor for the development and financing of the CCT. If the CCT were to be approved by the FTA for funding under the Federal New Starts and Small Starts programs, the State would be obligated to pay a substantial share of the capital costs of the CCT in payments that would be due over a relatively short period of time. If the FTA does not provide funding for a portion of the cost of the CCT, and the project is not able to be funded through these existing channels, then the Task Force proposes that the State fund the capital costs of the CCT through making an annual payment of the CCT's share of the overall RTV system debt service, thereby taking advantage of the leverage achieved through the local issuance of bonds.

2. Development of the RTV system is likely to materially increase both future tax revenues to the State and, in many cases, the State's return on its investment for other major capital expansion projects that are already in the County's long range plans, some of which are along the same corridors proposed for the RTV system. With the proposed RTV routes integrated into multiple modes of transportation, the proposed RTV network creates a "force multiplier" effect for many of the planned capacity expansion projects that are already included in the State's capital investment plans. In many cases, incorporating RTV service in those plans will yield greater people- moving capacity for each dollar spent by the State, thereby leveraging that new capacity investment more efficiently. Therefore, the Task Force believes there is a strong case that the State contribute, in addition to the payment described in the immediate preceding paragraph, one-half of the debt service attributable to the RTV system other than the CCT beyond 2020.

3. The State as a whole is a major fiscal beneficiary of the build-out of the RTV system. Montgomery County is the major economic engine of the State. Indeed, the additional private sector activity that would be generated as a result of balanced growth that would result from implementation of the RTV system will not only benefit

³⁹ All but one of the financial scenarios assume, when the option includes State (or additional County) funding, that the State will contribute \$20 million starting in 2014, increasing to \$35 million in 2017 and \$45 million in 2019, and continuing thereafter. The one remaining scenario that includes a State contribution assumes that the State contribution will be the entire amount of debt service attributable to the CCT, and one-half (50%) of the balance of debt service on the RTV system other than the CCT.

Montgomery County through increased public and private sector revenues, given the historic nature of transfer payments among the various local jurisdictions as a consequence of State fiscal and other policies, the State would actually benefit disproportionately. While further study of this proposition may be necessary, a recent study commissioned by the State gives a sense of the benefit the Task Force is describing. A study entitled: “Corridor Cities Transitway Project, Economic and Tax Impact Analysis, Prepared for the Maryland Department of Transportation by Parsons Brinckerhoff, October, 2011.” A copy of this study is attached in **Appendix C-2**. The focus of the study was to quantify the economic and fiscal impact by the year 2050 of developing the CCT as bus rapid transit 12 years sooner than would be the case were the CCT developed as light rail (“LRT”). The above study was limited to assessing the economic and fiscal impact of an early start of the CCT corridor using BRT as the mode, as opposed to completing the CCT 12 years later using the light rail mode. The study does not assess the long term economic or fiscal impact of building BRT compared with LRT. The “Summary Results” of the study were that: (1) BRT with Life Science Center (“LSC”) combination yields a present value of \$2.2 billion in terms of value added/economic impact,” which is \$950 million (or 74%) more than light rail with the LSC combination; (2) “[i]n terms of employment, BRT with LSC is estimated to create approximately 200,000 more jobs (in person years) than the LRT with LSC, which is an increase of 55% from the 380,000 supported by the LRT with LSC; and (3) “[t]he present value tax impact of BRT with LSC is \$416 million, which is 75% more than LRT with LSC at \$238 million.” While this study only applies to the CCT, and strictly speaking it compares development of light rail against an early start of development of bus rapid transit on the CCT, it illustrates the economic and fiscal impact of building an RTV system as the Task Force proposes – and suggests the short and long term benefits to the State as well as local jurisdictions. This is particularly the case when it is understood that absent the existence of transit in this corridor land use regulatory decisions preclude the build out of the LSC.

4. The proposed methodology of State participation in the financing of the RTV system actually benefits the State by enabling it to “leverage” its scarce resources over time, thereby enabling the State to not only support the RTV system but to do so without creating a zero sum game that limits the State’s ability to meet other transportation needs. The Task Force recognizes that the proposed State contribution is a

new idea and is without precedent. Traditionally, State commitments for its capital program have, to the maximum extent possible, been linked with federal funding to achieve the State's transportation goals. However, the key is for the State to meet its goals. In the case where a local government is prepared to make the extensive commitment being proposed in this Report, and where the capital improvements are so critical to the short and long term well-being of the locality and the State, the goal should be for the State to use its resources as efficiently as possible – and there could not be a more efficient use of the State's resources than in the manner proposed herein. It would allow the State to leverage its resources in a way it could not do itself, supporting a long-term project in a unique way.

As contemplated by the Task Force, all money received for capital purposes would be deposited into a special fund that would be inviolate. Special district taxes, the State contribution, and any other contribution relating to capital costs would be paid into that special fund – and money in the special fund could only be used to pay debt service and pay-as-you-go funding for capital costs. Any special fund balances in excess of what is required to meet bond payments could only be used in the manner described in bond indentures, and any legislation and internal rules established for the purpose. Among other things, reserves in the capital special fund would be available to defray the cost of replacing rapid transit vehicles, stations and other physical assets, and would also be available for the purpose of system expansion within the debt limits and other conditions established under the bond indentures.

With respect to operating expenses, the Task Force also proposes that a separate special taxing district be formed that encompasses properties with 90% of the assessed value of real property in the County, and that revenues from that special taxing district be paid into a separate special fund used exclusively for the purpose of defraying operating losses of the RTV system⁴⁰. Alternatively, in the event the authority to fund operating losses through the special tax district mechanism was not obtained, one of the scenarios presented suggests increasing use of the current transit tax as the vehicle through which operating losses of the RTV system would be funded. This would mean that operating losses of the RTV system and the Ride-On bus system would both be included within the revenues derived from an increased the current transit tax.

⁴⁰ Legislative authority to collect revenues for operating expenses of a transit system through a special taxing district mechanism does not now exist. New authority for this approach would be required.

However, as they review each of the scenarios which appear below, readers are cautioned that we should not fall prey to the fallacy of artificial precision. There are times when precise numbers about the capital cost and operating expenses cannot be given, especially at the conceptual stage of a project - which is where the Task Force finds itself. The best that can be done is to illustrate how a funding structure will work if a general estimate of costs is given. That is the case in this instance.

The primary reason for this is that there are simply too many imponderables at this time, including:

1. We do not know how much, if at all, the State will contribute to the capital investments or operating expenses of the RTV system. This Report will discuss below why the State should make such contributions; however, a variety of circumstances make it difficult to predict the amount of such contributions with high confidence. Nor do we know to what extent other appropriate revenue sources could become available (such as through the private sector sponsorship of RTV stations, other means of raising private sector revenues, and other appropriate excise taxes, all of which need to be explored). While some of these additional revenue sources will be small when viewed separately, taken together they could offer material assistance to the financial picture of the RTV system.

2. The Planning Board has not developed its recommendations regarding amendments to the MPOH, and the Council has not acted on those recommendations. These decisions are critical elements of knowing exactly the physical attributes and configuration that corridors will have on the ground. Without knowing whether mixed traffic operation will be prevented in certain locations by the taking of property to widen right-of-way, or will result from repurposing automobile lanes, or otherwise, or that no provision to avoid mixed traffic operation is made, a precise estimate of right-of-way costs cannot be prepared. Nor may we know whether in order to repurpose lanes we will need to construct guideways through certain areas or whether we will simply dedicate existing lanes without substantial construction. Obviously, the answers to these questions will impact cost. *The one thing we do know is that in order to have an optimally functioning RTV system we must have dedicated lanes – however they are physically configured and however that goal may be accomplished.*

3. In every major construction job reliable cost numbers do not exist until designs have reached a substantial enough level of detail to enable the “owner” to shift

pricing risk to the “designer and builder.” This cannot happen until engineering plans at a sufficient level of detail have been produced. At this point, the Task Force has had the benefit of a preliminary feasibility study, the PB Study, as well as a concept plan developed by TTG. The Task Force commissioned TTG to address an enormous challenge: to develop creative solutions to reduce the amount of mixed general traffic that the PB Study had designed (which was approximately 1/3 of the entire system); but to design a comprehensive Countywide system that could be built as swiftly as possible by minimizing the need to acquire large amounts of new right-of-way, or expand existing bridges, adversely impact wetlands, or otherwise materially adversely impact the environment. Notwithstanding that the TTG work has been imaginative and ingenious, because of the constraints imposed on TTG it still has not solved all of the problems that must be addressed during future planning, studies and design. Indeed, the Task Force itself has raised questions whether some possible alignment scenarios can be accommodated within existing right-of-way. Furthermore, given the physical constraints the Task Force imposed on TTG, even with the set of creative solutions TTG offered, the amount of mixed general traffic was only reduced from 1/3 of the system, as the PB Study proposed, to 1/4 of the system, as TTG proposed. The amount of mixed general traffic, even in the TTG concept plan, is simply too much to achieve the level of operational performance that the Task Force has established as minimally needed to have a transformational rapid transit system. This presents a serious challenge to the Planning Board and its staff, and the County Council, in their respective deliberations regarding the MPOH study, as well as to the Task Force in coming to grips with construction costs.

4. The Task Force believes that use of design-build/operate- maintain contracting techniques, as well as other more streamlined procurement procedures that are not currently in use, may result in more advantageous pricing and more expeditious planning, engineering, construction and completion of the project. In addition, combining responsibility for development of the project with responsibility for operating and maintaining the RTV network may have positive budgetary impacts on capital and operating costs. However, since no decision has been made to utilize alternative procurement techniques (such as the design-build/operate-maintain techniques discussed in detail in Part V above), it is impossible to make assumptions about time and cost savings that might be achieved through the use of those techniques. Furthermore, while the Task Force has recommended that the County explore the need and wisdom of

establishing a new, quasi-independent authority with sole focus and responsibility over the development and operation of the County's transit system, such a recommendation has not been adopted and, accordingly, it is impossible to accurately assess whether having special procurements through an independent agency, and management of the entire process through that agency, would also result in efficiencies and cost savings.

Additionally, our community finds itself in the midst of an extraordinary fiscal situation. At the State level, as of this writing, it is unclear whether the General Assembly is yet to adopt measures that will replenish the State's Transportation Trust Fund. The State's issues regarding transportation finance may even have played a role in creating nervousness about the ability to fund critical transit priorities. The Task Force's endorsement of the Purple Line, the CCT, and a Countywide RTV system as part of a necessary comprehensive, integrated transit network remains steadfast. Good fiscal planning – and the use of some of the financial techniques the Task Force suggests in this Report – should enable the County to have both projects.

Nonetheless, the Task Force believes the County must move ahead to begin implementation of an RTV system. The truth is that we may not have a complete picture today of exactly how much it will cost, or how it will be funded; however, the County must work to preserve its ability to implement the project in the overriding interest of the community. An investment of reasonable size now will afford the County time to work out the details of how to move forward – and will position the County to be able to implement the funding structure and approach that the Task Force proposes.

C. Capital Investment

The Task Force has developed an estimate of the required capital investment in the RTV system. As noted above, such an estimate reflects the conceptual level of planning that has been reached. Until more detailed planning, studies and engineering work has been undertaken any capital investment estimate is just that: an estimate.

The Task Force began with a review of the capital estimates presented in the PB Study. The estimate of capital investment in the PB Study was between \$2.3 and \$2.5 billion, excluding right-of-way costs. The PB Study capital cost estimate included a 30% contingency, and “ad-ins” that were “25% of system elements.” “Ad-ins” are defined in

the PB Study as post-planning activities such as preliminary engineering, final design, construction management, insurance and start-up costs⁴¹.

The Task Force engaged TTG to develop a concept plan and cost estimates of corridors and segments studied in that concept plan. The concept plan included approximately 105 miles of constructed corridors and segments⁴². The Finance Working Group was also given access to the construction estimates for the first stage of the CCT (9.1 miles), prepared by Kittelson and Associates, Inc. for certain landowners along the line of stage one of the CCT (see Appendix D-3.) The Task Force used the cost estimates of the MTA for the second stage of the CCT (5.9 miles), because the Kittelson study did not address that portion of the corridor.

The TTG concept plan had the following distribution of methods to configure RTV corridors: approximately 60.5 miles of the TTG configuration were configured as single reversible lanes in the medians, approximately 9 miles were in other reversible lanes, 3.6 miles were included in dual dedicated lanes in the median, 5 miles were in Business Access Transit (BAT) lanes at the curbs and 27 miles were in mixed traffic. To the extent that the ultimate RTV system to be developed differs from the TTG configuration – and it inevitably will differ from it – capital costs will differ. Some changes could lead to reductions in cost and others to increases⁴³. This is unknown as of this writing because only when decision-makers have adopted amendments to the MPOH can system designers know within what actual right-of-way constraints they will need to design an RTV system.

Using the foregoing sources as the foundation of the capital investment analysis, the Task Force made adjustments which increased the costs of the overall RTV system to the extent that certain costs were based on the TTG study. For example, the Task Force increased the amounts set aside in the TTG study for what the PB Study calls “ad-ins,” increased an allowance for right-of-way costs, increased the allowance for station costs (although there is no unanimity at this stage as to what the total average cost of stations

⁴¹ PB Study, at pages 27 through 29.

⁴² The CCT, the ICC and the Mid-County Connector were excluded from the concept plan study. In addition, a small portion of the Md. 355 Rockville Pike North segment was excluded because the existing roadway was too narrow for realistic construction of an RTV treatment.

⁴³ The primary areas that could produce changes in cost would be: whether more of the corridor network is built in median space (which would increase costs), whether more of the network will be built in curb lanes without physical segregation of those lanes (which would decrease costs), and whether more or less right-of-way is taken.

should be) and increased other items. The Task Force also believes that there is a substantial opportunity for savings in the cost of Stage Two of the CCT from those costs stated in the MTA estimate; however, no reduction in that cost has been reflected. Finally, the TTG study includes a 20% utilities contingency, a 10% allowance for “maintenance of traffic,” and a 35% contingency. Obviously, until more detailed design, we will not have a more precise estimate of capital investment requirements; however, the Task Force believes that its estimate is reasonable for this level of planning⁴⁴, especially after taking into account the contingencies provided. As noted in other portions of this report, the Task Force also believes that opportunities for savings may be realized through the use of streamlined procurement techniques, the streamlining of environmental assessments and permitting, and with use of design-build/operate-maintain strategies by integrating the design, construction and, potentially, the operation of the system. These cannot be quantified at this time. Also, the number of vehicles required for the system may be greater or fewer in number than estimated. A system optimization study is needed before the number of vehicles required can be estimated with any precision.

Based on the foregoing, the estimate of required capital costs for the RTV system is \$1.826 billion in current year dollars. This does not include the cost of debt service and the accrual of capital reserves⁴⁵. This capital investment estimate was the basis for further efforts by the Finance Working Group and its financial advisor to develop an approach to structuring debt issuances to meet capital investment requirements, applying traditional conservative assumptions in the process. Attached to this Report as **Appendix E-1** is the detailed presentation to the Task Force by the financial advisor explaining the derivation of the capital investment estimates. The capital cost estimate stated above is

⁴⁴ MCDOT has opined that in spite of the fact that the Finance Working Group, with the assistance of its financial advisor, adopted a number of increases to the estimated capital budget, such increases are inadequate and that MCDOT believes that such costs will be substantially more. Again, MCDOT could be right; however, until further engineering work this cannot be known. The Task Force believes it has adopted reasonable contingencies to take these risks into account but readily agrees that estimates of the required capital investment at this point cannot be precise and final. Furthermore, depending on the configuration of corridor alignments and construction techniques, we also do not know whether economies can be realized through value engineering and otherwise.

⁴⁵ The total RTV system mileage (including the CCT and ICC but not the Mid-County Connector) is 164.1 miles. Based on this mileage, the average cost per mile of the RTV system without debt service is approximately \$11,127,000 per mile. The actual amount of this total system being constructed at full build out would be 141.2 miles. The average cost of the RTV system without debt service for constructed miles is \$12,932,000.

the product of a combination of sources, including but not limited to the PB Study, the TTG study, the Kittleson study to the extent of the first stage of the CCT (9.1 miles), the MTA's pricing of the second stage of the CCT (5.9 miles), and other adjustments to cost suggested by MCDOT and the Finance Working Group. Additional documents supporting all presentations of the financial advisor to the Finance Working Group and the Task Force are available to the County Executive, County Council and other decision-makers upon request. The **Appendix E-3** also includes a complete set of cash flow statements prepared by the financial advisor and presented to the Finance Working Group with respect to two illustrative scenarios (Scenarios A and D) to demonstrate the level of detail considered by the Task Force in developing the financial plan. Other cash flow statements for the scenarios included in this Part of the Report, and for other scenarios that were not included, have not been included in the appendices to this report because they are too voluminous.

D. Operating Expenses

While developing capital investment requirements at this level of planning is as much art as science, in many ways projecting operating costs for the contemplated RTV system is equally difficult. The starting point for the Finance Working Group on this subject was the PB Study⁴⁶. Using ridership forecasts, the PB Study reflected estimates of operating and maintenance costs on a corridor-by-corridor basis. The PB Study also developed an estimate of ridership and an assumed fare structure to arrive at "fare box recovery"⁴⁷. The PB study concluded that the average operating cost per mile per year for the 148.3 mile, 16-corridor system included in that study was \$1.1 million⁴⁸. While there are Task Force members who believe that this average cost does not adequately take into account economies that will be realized from operating a system of the scale proposed, they have no data-supported basis for using a different estimate of cost at this time, and the Task Force has no choice but to use the estimates developed in the PB Study. Thus, the Task Force has applied the cost per mile assumptions derived from the PB analysis to the system mileage being proposed to arrive at operating cost assumptions

⁴⁶ See, PB Study, pages 31 through 34.

⁴⁷ "Fare box recovery" is a term of art in the transit industry which means the percent of operating and maintenance costs that is met by rider fares actually paid.

⁴⁸ This average operating and maintenance cost per mile per year is consistent with what Task Force members were advised when they visited other communities with operating corridors. However, in each such instance, the other communities are operating transit corridors with total mileages less than 20 miles.

for the financial analysis performed by the financial advisor resulting in the financial scenarios attached to this Report. The Task Force also used a series of estimates for ridership derived from the PB Study, and an assumed fare structure to project fare revenues and fare box recovery, ramping up such revenues during the period when various phases of the system are completed and become operational. The range of such recovery is at 20% during start-up periods, rising to approximately one-third thereafter⁴⁹, and settling at approximately 30% over the long run. The main departure from the assumptions in the PB Study is that the Task Force's projections assume that start-up average net collected fares will be \$1.00 per boarding, as opposed to the \$0.80 average used in the PB Study. The reason for this difference is that the Finance Working Group has assumed that the system will begin coming on line in 2016, and that the fare for a ride on the RTV system should be set at a level higher than the average fare for Ride-On⁵⁰. These assumptions were applied in cash flow statements generated for each of the scenarios presented in this part of the Report. Stated another way, these assumptions were the basis for calculation of the annual amounts of money that would be required to defray operating losses. If those who believe the average cost per mile of the system used in these assumptions is too high, then the operating losses will be overstated. The projected operating losses increase starting in the first year of operation (2016) throughout the period when various corridors come "on-line" and as the phases of the network become operational. The Task Force recommends that during the next stage of planning further and intensive study be given to the operating expense and loss assumptions that will be made in developing pro forma cash flow statements for the system. Such a study should include reaching out to private operators of transit systems to gain insight from them concerning reasonable assumptions to use in developing these projections.

⁴⁹ The PB Study had a range of ultimate fare box recovery of from 26% to 33%. See, PB Study, page 32.

⁵⁰ Montgomery County supports the regional pricing of bus fares among local transit providers. Recommending a higher fare for RTV service creates a new transit fare for the region that is different from current fare agreements. While proposing a higher fare for RTV service implies that the region's bus operators will agree to a new bus tariff for RTV service that is higher than the fixed route bus service for a higher quality of transit service, the Task Force believes that the contemplated RTV service will be of a higher quality than existing services and that such an increase will be justified. In light of the fact that other jurisdictions may also consider developing this higher quality service, the implication of the region not approving a new class of fare would be serious.

E. Financial Scenarios

1. General Considerations

Over the course of several meetings, the Finance Working Group considered numerous alternative financial scenarios. The Finance Working Group reviewed data collected and assembled regarding the real property taxable base of the County, both generally and as it applied to areas within ¼ mile and ½ mile of the RTV corridors. This data was divided by property-type. The Finance Working Group also discussed the question whether special taxing districts proximate to the corridors should be drawn as linear geographic areas along corridors or centered around station locations along corridors. There are two schools of thought concerning this question. However, it was determined that for purposes of current projections and estimates there is no alternative to using linear districts along corridors because even if it was decided that station centric districts were appropriate we do not know the location of all stations and it is impractical to attempt to draw districts in this fashion at this time⁵¹.

The financial advisor also gave detailed presentations to the Finance Working Group concerning appropriate underwriting and bond rating agency criteria that should be applied to ensure favorable marketing of the bonds at the highest possible bond rating. These criteria were applied in developing the scenarios. A general inflation rate of 3% was applied to all costs, and growth rates in the County's assessable base developed by the County's Department of Finance also were used in developing the scenarios.

2. Summary of Conceptual Financial Scenarios

The following ten conceptual financial scenarios have been selected for presentation in this Report and are for illustrative purposes. As noted above, the Finance Working Group reviewed numerous alternative scenarios, many of which were redundant or which produced results that were obviously unworkable for a variety of reasons. The below scenarios present a range of choices. Some (for example, Scenario E) may be viewed as obviously unacceptable. However, they are included to illustrate the breadth of what has been considered. Other scenarios are possible and can be developed upon request. In addition to the summary description of each illustrative scenario, also appearing below are a series of charts, graphs and tables which depict the tax rates and specific amounts required to be collected. **It should be noted that each of the following**

⁵¹ In the view of some, this is an additional reason why decision-makers should elect a special taxing district of the broadest possible scope – to avoid issues with taxpayers that would naturally arise from more localized special taxing districts. See discussion in Section VI(F) of this Report.

scenarios are based on the capital cost estimate of \$1.826 billion described in Part VI(C) above. Those charts, graphs and tables, which indicate the amount of the tax bill that would be presented to a typical residential and non-residential taxpayer, are reflected in 2012 constant dollars, in the belief that all of us can best evaluate costs in current dollars, as opposed to trying to imagine the implication of stating things in inflated dollars⁵² as many as 23 years into the future. The table which immediately follows summarizes the primary attributes of each of the 10 scenarios included in this Report. For clarity of understanding, the following words and phrases have the meanings ascribed to them below:

(a) “Base Implementation Schedule” means a period of nine years for the full build out of all phases of the proposed RTV network.

(b) “Extended Implementation Schedule” means a period of 20 years for the full build out of all phases of the proposed RTV network.

(c) “State/County Contributions” means that the State will contribute \$20 million starting in 2014, increasing to \$35 million in 2017 and \$45 million in 2019, and continuing thereafter. One remaining scenario that includes a State contribution assumes that the State contribution will be the entire amount of debt service attributable to the CCT, and one-half (50%) of the balance of debt service on the RTV system other than the CCT. This phrase also means that to the extent a State contribution is unavailable at any point the County may choose to appropriate funds from its capital program.

The second table appearing below summarizes these same attributes graphically, categorizing them by type of cost and source of funding.

Readers should note that financial materials are contained in Appendices E-1 through E-5 to this Report. These financial appendices are voluminous and, consequently, will not accompany the Report. However, the financial appendices will be available to decision-makers reviewing this Report.

⁵² Appendix E-3 contains a summary of costs in inflated dollars for the purpose of completeness. The illustrative full statement of cash flows for Scenarios A and D, as well as all other cash flow statements, are in year-of expenditure dollars, because inflation needs to be taken into account in order to determine the then-current requirements for interest payments on bonds and then-current tax rates necessary to defray capital and operating costs.

Table 3
RTV Scenario Summaries

Scenario A
-Capital costs funded by ½ mile non-residential property tax district and State /County contributions
-Operating costs funded by residential and non-residential property tax on 90% of County
-Base implementation schedule
Scenario B
-Capital costs funded by 1/2 mile non-residential property tax district and State/County contributions plus up to \$0.03 tax on properties outside of ½ mile district
-Operating costs funded by property tax on 90% of County
-Base implementation schedule
Scenario B1
-Capital costs funded by ½ mile non-residential property tax district plus up to \$0.03 tax on properties outside of ½ mile district
-No State and County contributions
-Operating costs funded by residential and non-residential property tax on 90% of County
-Base implementation schedule
Scenario C
-Capital costs funded by 1/2 mile non-residential property tax district and State/County contributions plus up to \$0.03 tax on properties outside of ½ mile district
-Operating costs funded by residential and non-residential property tax on 90% of County
-Extended implementation schedule
Scenario C1
-Capital costs funded by 1/2 mile non-residential property tax district plus up to \$0.03 tax on properties outside of ½ mile district
-No State and County contributions
-Operating costs funded by residential and non-residential property tax on 90% of County
-Extended implementation schedule
Scenario D
-Capital costs funded by property tax on 90% of County and State/County contributions
-Operating costs funded by residential and non-residential property tax on 90% of County
-Base implementation schedule
Scenario D-a2
-Capital costs funded by property tax on 90% of County tax base
-Annual debt service related to CCT's share of RTV system costs (36%) funded by State
-Remaining 64% of annual debt service funded by County property tax through 2020 and
-Operating costs funded by residential and non-residential property tax on 90% of County
-Base implementation schedule
Scenario D1
-Capital costs funded by property tax on 90% of County and State/County contributions
-Operating costs funded by residential and non-residential property tax on 90% of County
-Extended implementation schedule
Scenario D1-a2
-Capital costs funded by property tax on 90% of County tax base and State/County
-Annual debt service related to CCT's share of RTV system costs (36%) funded by State
-Remaining 64% of annual debt service funded by County property tax through 2020 and evenly split between County and State beginning in 2021
-Operating costs funded by residential and non-residential property tax on 90% of County
-Extended implementation schedule
Scenario F
-Capital costs funded by property tax on 90% of County
-Operating costs funded by residential and non-residential property tax on 100% of County tax base
-No State and County contributions
-Extended implementation schedule

Table 4
RTV Scenario Comparison

<i>Capital Cost</i>		<i>Operating Cost</i>	<i>State and County Funding</i>		<i>No State and County Funding</i>	
<i>Property Category</i>	<i>Properties</i>	<i>% of County</i>	<i>Base Period (10 Year)</i>	<i>Extended Period (20 Years)</i>	<i>Base Period (10 years)</i>	<i>Extended Period (20 Years)</i>
<i>Non-Residential properties</i>	<i>Half Mile from Route</i>	<i>90%</i>	A			
<i>Non-Residential residential</i>	<i>Half Mile from Route + \$03 for remainder of county</i>	<i>90%</i>	B	C	B1	C1
<i>All properties</i>	<i>90% of County</i>	<i>90%</i>	D	D1		
	<i>90% of County, Debt service for CCT funded by state (36%) thru 2020; state/county evenly split 2021+</i>					
<i>All Properties</i>		<i>90%</i>	D-a2	D1-a2		
<i>All properties</i>	<i>90% of County</i>	<i>100%</i>				F

As noted in the table immediately above, six of the scenarios (A, B, B1, C, and C1) have special taxing districts within ½-mile of the proposed RTV corridors for the purpose of defraying debt service payments. Four (4) of these scenarios (B, B1, C and C1) also have non-residential properties outside of the ½ mile special taxing district contributing up to 3 cents per \$100 for capital costs. In all of these scenarios, except B1 and C1, the scenarios call for a graduated State contribution. Scenarios C and C1 contemplate a 20 year implementation period, while Scenarios A, B, and B1 call for a 9 year implementation. All of these scenarios have operating losses defrayed by the proceeds of taxes paid within a special taxing district encompassing the owners of real property having 90% of the taxable base of the County (the “90% districts”).

Four (4) scenarios (D, D1, D-a2 and D1-a2) have two special taxing districts of the same size, the 90% districts, one to cover debt service and the other to cover operating losses. All of these scenarios have a State contribution. Scenarios D and D-a2 have a 9 year implementation schedule and Scenarios D1 and D1-a2 have a 20 year schedule.

Scenario F has the 90% special taxing district for capital, and assumes use of the existing mass transit tax for operating losses.

The following table summarizes the details of what is presented under each specific scenario outlined below. The purpose of the table is to state the cost in current dollars that would appear on the tax bills of a typical residential and non-residential taxpayer. The columns highlighted in yellow reflect the average cost of the special district tax through 2035. In addition, columns entitled “maximum residential” and “maximum commercial” show the maximum amount of tax in current dollars that would

be due during the year when the “high point” of tax is reached. The year in which these maximum amounts are reached is also spelled out.

Table 5
At a Glance Scenario Results

Scenario	Brief Description	Residential Tax (Within 1/2 mile of Corridors) Average in 2012 Constant Dollars*	Residential Tax (Beyond 1/2 mile of Corridors) Average in 2012 Constant Dollars*	Maximum Residential in 2012 Constant Dollars	First Year in Which Maximum Residential Occurs	Commercial Tax (Within 1/2 mile of Corridors) Average in 2012 Constant Dollars**	Commercial Tax (Beyond 1/2 mile of Corridors) Average in 2012 Constant Dollars**	Maximum Commercial in 2012 Constant Dollars	Year in Which Maximum Commercial Occurs
Scenario A	Capital: Comm w/in 1/2 mile STD Oper: All properties 90% STD Some State/County Contribution 9 yr "Base Implementation"	\$ 232.73	same as 1/2 mile	\$ 320.00	2020	\$ 1,294.32	\$ 290.91	\$ 2,175.00	2022
Scenario B	Capital: Comm w/in >1/2 mile STD Oper: All properties 90% STD Some State/County Contribution 9 yr "Base Implementation"	\$ 330.91	same as 1/2 mile	\$ 440.00	2020	\$ 752.27	\$ 413.64	\$ 1,525.00	2022
Scenario B1	Capital: Comm w/in >1/2 mile STD plus all Residential 90% STD Oper: All properties 90% STD NO State/County Contribution 9 yr "Base Implementation"	\$ 336.36	same as 1/2 mile	\$ 440.00	2020	\$ 1,175.00	\$ 420.45	\$ 2,150.00	2022
Scenario C	Capital: Comm w/in >1/2 mile STD Oper: All properties 90% STD Some State/County Contribution 20 yr "Extended Implementation"	\$ 252.73	same as 1/2 mile	\$ 360.00	2028	\$ 357.95	\$ 315.91	\$ 625.00	2026
Scenario C1	Capital: Comm w/in >1/2 mile STD Oper: All properties 90% STD NO State Contribution 20 yr "Extended Implementation"	\$ 269.09	same as 1/2 mile	\$ 360.00	2028	\$ 707.95	\$ 336.36	\$ 1,175.00	2026
Scenario D	Capital: All properties 90% STD Oper: All properties 90% STD Some State/County Contribution 9 yr "Base Implementation"	\$ 385.45	same as 1/2 mile	\$ 580.00	2022	\$ 481.82	same as 1/2 mile	\$ 725.00	2022
Scenario D1	Capital: All properties 90% STD Oper: All properties 90% STD Some State/County Contribution 20 yr "Extended Implementation"	\$ 260.91	same as 1/2 mile	\$ 400.00	2028	\$ 326.14	same as 1/2 mile	\$ 500.00	2028
Scenario D-A2	Capital: All properties 90% STD Oper: All properties 90% STD Some Unique State/Co Contrib 9 yr "Base Implementation"	\$ 344.55	same as 1/2 mile	\$ 500.00	2022	\$ 430.68	same as 1/2 mile	\$ 625.00	2022
Scenario D1-A2	Capital: All properties 90% STD Oper: All properties 90% STD Some Unique State/Co Contrib 20 yr "Extended Implementation"	\$ 247.27	same as 1/2 mile	\$ 340.00	2028	\$ 309.09	same as 1/2 mile	\$ 425.00	2028
Scenario F	Capital: All properties 90% STD Oper: All pptides 100% STD NO State Contribution 20 yr "Extended Implementation"	\$ 310.91	same as 1/2 mile	\$ 420.00	2026	\$ 388.64	same as 1/2 mile	\$ 525.00	2026

STD = Special Taxing District

* Average value of home in 2012 is presumed to be \$400,000

** Average square foot value of commercial property in 2012 is presumed to be \$250 per square foot and applied to a hypothetical 2,000 square foot small business

Scenario E was rejected by the Task Force due to cost, but it is provided in **Appendix E-5** for informational purposes. The graphs appearing immediately below consolidate the taxes paid on typical residential and non-residential properties for each scenario. Each scenario has colored bars which show the level of tax at seven points during the period being reviewed. These tables show how the proposed special taxes would ramp up to a maximum point – and then diminish somewhat and stabilize.

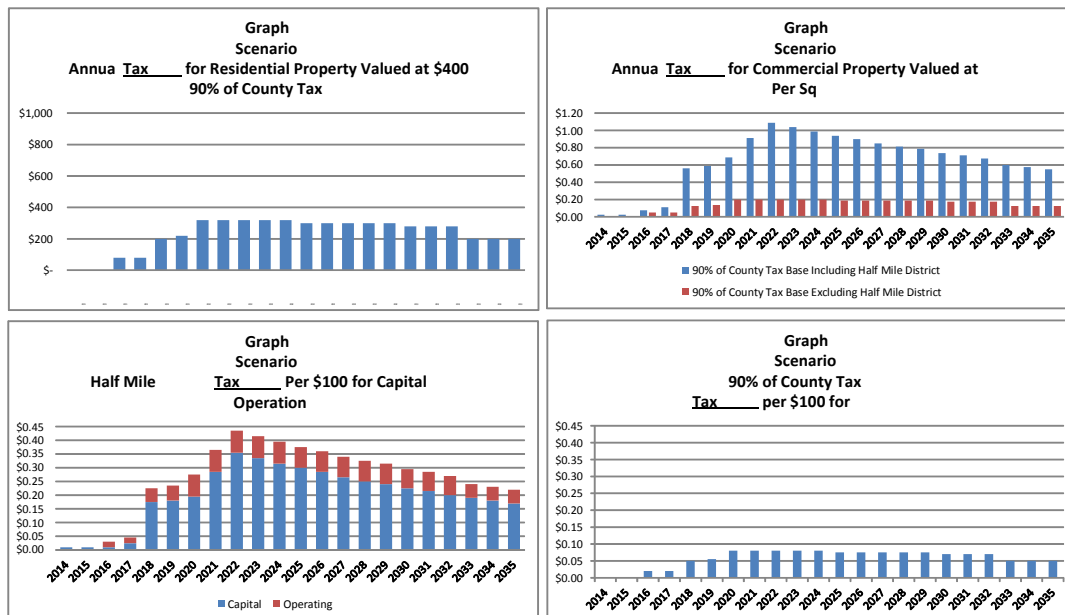
3. Specific Scenarios

The tables and charts set forth under each scenario graphically depict residential and non-residential tax rates, as applicable, and the amount of actual tax bills that will be sent to average residential and hypothetical non-residential property taxpayers. Tax rates are expressed in “year of expenditure” dollars. The dollar amount of tax payments projected to be owed is expressed in 2012 dollars so that decision-makers and taxpayers can relate future payments to their current dollar values.

Finally, new legislative authority would be required to some degree for all scenarios except Scenario F. For that scenario contemplating differential tax rates for commercial properties, new authority would be necessary to accomplish that result. For those scenarios contemplating the creation of a special taxing district to collect revenues to defray operating losses, new authority would be required to accomplish that.

■ Scenario A

This scenario assumes that capital costs are funded by taxes collected from within a ½ mile special taxing district on commercial properties. It also assumes that the State will make an annual contribution to pay a portion of debt service equal to \$20 million a year starting in 2014, increasing to \$35 million a year in 2017, and increasing to \$45 million a year in 2019. As to operating expenses, this scenario assumes that operating expenses are funded by taxes collected from within a special taxing district that encompasses all properties totaling 90% of the taxable base of the entire County. This scenario also assumes that construction of the RTV system will be complete in 2021 (the “Base Implementation”). The charts below depict the ½ mile special taxing district tax rates, the tax rates for the operating special taxing district, the taxes paid on a residence with an appraised value of \$400,000⁵³, and the amount of rent per square foot that would be added to the rent of a typical office building tenant. This scenario assumes that the project will be completed within nine (9) years (the “base implementation schedule”).

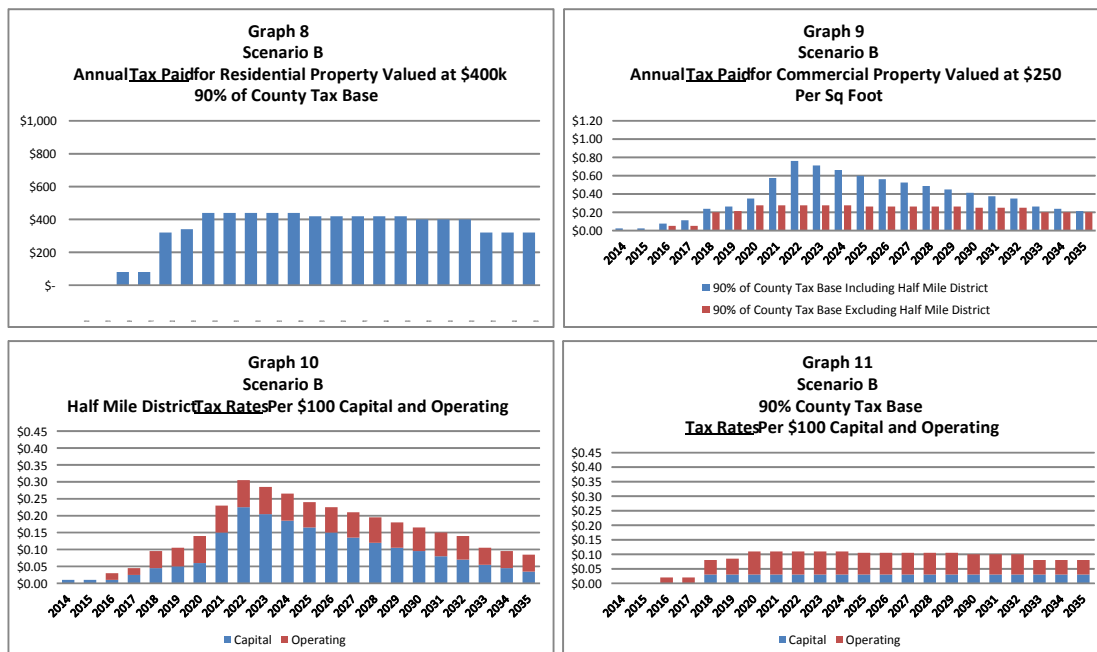


⁵³ The actual current average of a residential property is approximately \$386,000; however, the Task Force has rounded this number to \$400,000 for purposes of this analysis.

The average tax on a typical residential property during the period is \$232.73, and the maximum tax on residential properties would be \$320, reached in year 2020. The average tax on a typical commercial property⁵⁴ inside the special taxing district would be \$1,294.32 and \$290.91 outside of the special taxing district. The maximum tax for commercial properties is \$2,175.00, which would be reached in 2022⁵⁵. The maximum tax rate for residential properties would reach \$0.08 per \$100 in 2020. The maximum tax rate for non-residential properties within the special taxing district would reach \$0.44 per \$100. The average per square foot increase in office rent would be \$1.09 within the special taxing district and \$0.20 outside of the special taxing district.

■ **Scenario B**

This scenario makes all of the same assumptions that were included in Scenario A. However, it adds a feature to the method of paying for capital costs. In addition to imposing the tax on non-residential properties within the ½ mile special taxing district, it would also subject to a special tax commercial properties outside of the ½ mile distance for such properties within the 90% special taxing district described for defraying operating expenses.



⁵⁴ To reiterate what is noted elsewhere, to create a realistic expression of the cost on a typical non-residential taxpayer, the Task Force has assumed the space occupied by such taxpayer is 2,000 square feet.

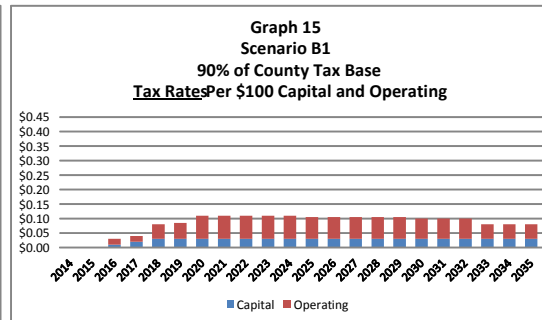
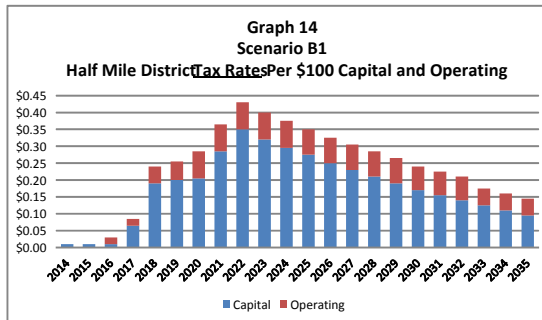
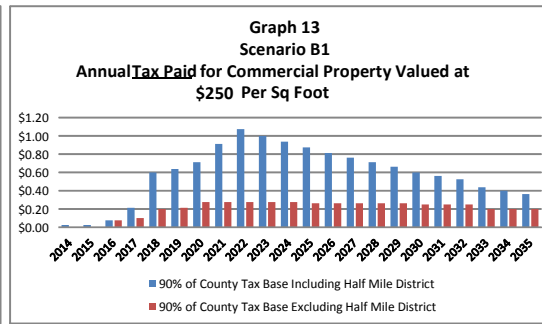
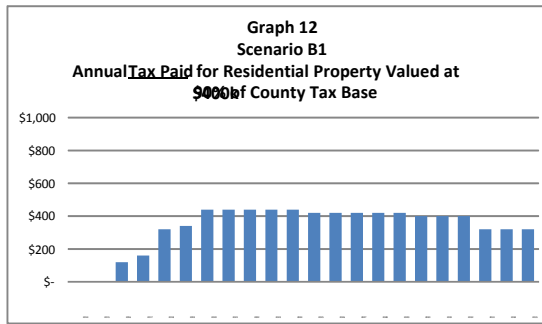
⁵⁵ As used herein, the terms “commercial properties” and “non-residential properties” are used interchangeably.

The average tax on a typical residential property during the period is \$330.91, and the maximum tax on residential properties would be \$440, reached in 2020. The average tax on a typical commercial property inside the special taxing district would be \$752.27 and \$413.64 outside of the special taxing district. The maximum tax for commercial properties would be \$1,525.00, which would be reached in 2022. The maximum tax rate for residential properties would reach \$0.11 per \$100 in 2020, and the maximum tax rate for non-residential properties would reach \$0.31 per \$100, in 2022. The average per square foot increase in office rent would be \$0.38 within the special taxing district and \$0.21 outside of the special taxing district.

■ **Scenario B1**

This scenario assumes that capital costs are funded by taxes collected from: (i) a special district tax on non-residential properties within a ½ mile of a transit line; (ii) up to a \$0.03 tax on commercial properties outside the ½ mile special taxing district; and (iii) from residential properties within the 90% special taxing district. It also assumes that some government agency (e.g. MDOT or the County) will make an annual contribution to pay a portion of debt service equal to \$20 million a year starting in 2014, increasing to \$35 million a year in 2017, and increasing to \$45 million a year in 2019⁵⁶. As to operating expenses, this scenario assumes that operating expenses are funded by taxes collected from within a special taxing district, which is comprised of properties totaling 90% of the taxable base of the entire County. This scenario also assumes that construction of the RTV system will be complete in 2021 (the “Base Implementation”).

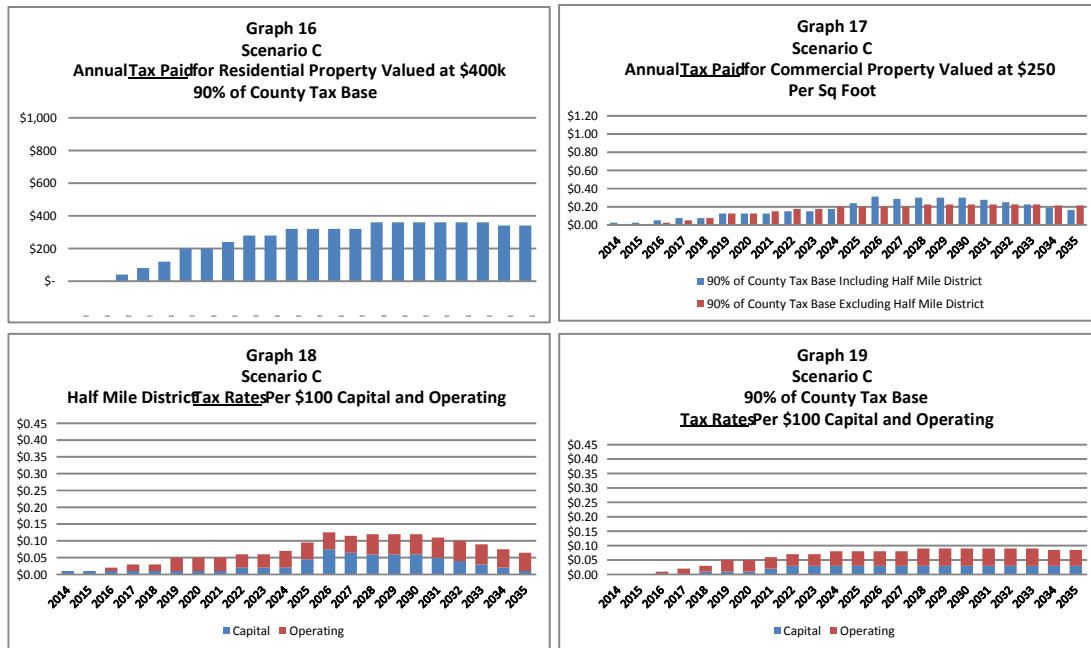
⁵⁶ When this Report refers to a “State contribution” that phrase should be deemed to include any County funds that may be set aside for this purpose either from the CIP or the County budget.



The average tax on a typical residential property during the period is \$336.36, and the maximum tax on residential properties would be \$440, reached in 2020. The average tax on a typical commercial property inside the special taxing district would be \$1,175 and \$420.45 outside of the special taxing district. The maximum tax for commercial properties would be \$2,150.00, which would be reached in 2022. The maximum tax rate for residential properties would reach \$0.11 per \$100 in 2020, and for non-residential properties the maximum of \$0.43 would be reached in 2022. The average per square foot increase in office rent would be \$0.59 within the special taxing district and \$0.21 outside of the special taxing district.

■ **Scenario C**

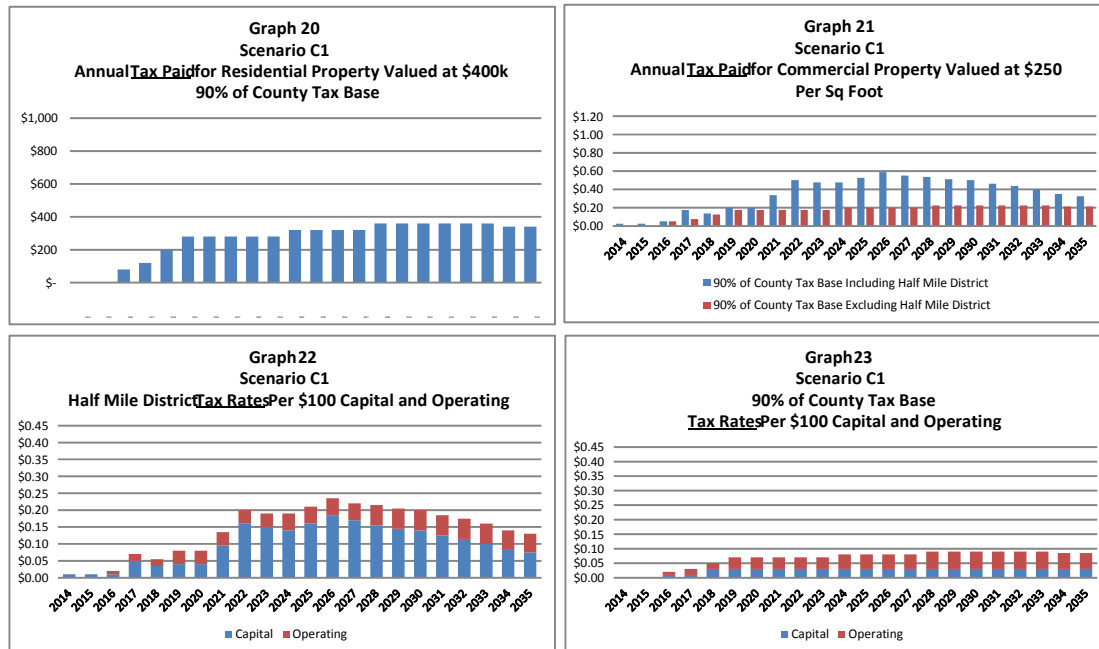
This scenario is the same as Scenario B above, except that it assumes a 20-year implementation schedule (system complete in 2032).



The average tax on a typical residential property during the period is \$252.73, and the maximum tax on residential properties would be \$360.00 reached in 2028. The average tax on a typical commercial property inside the special taxing district would be \$357.95 and \$315.91 outside of the special taxing district. The maximum tax for commercial properties would be \$625.00, which would be reached in 2026. The maximum tax rate for residential properties of \$0.09 per \$100 would be reached in 2028, and the maximum tax rate of \$0.13 per \$100 for non-residential properties would be reached in 2026. The average per square foot increase in office rent would be \$0.18 within the special taxing district and \$0.16 outside of the special taxing district.

■ Scenario C1

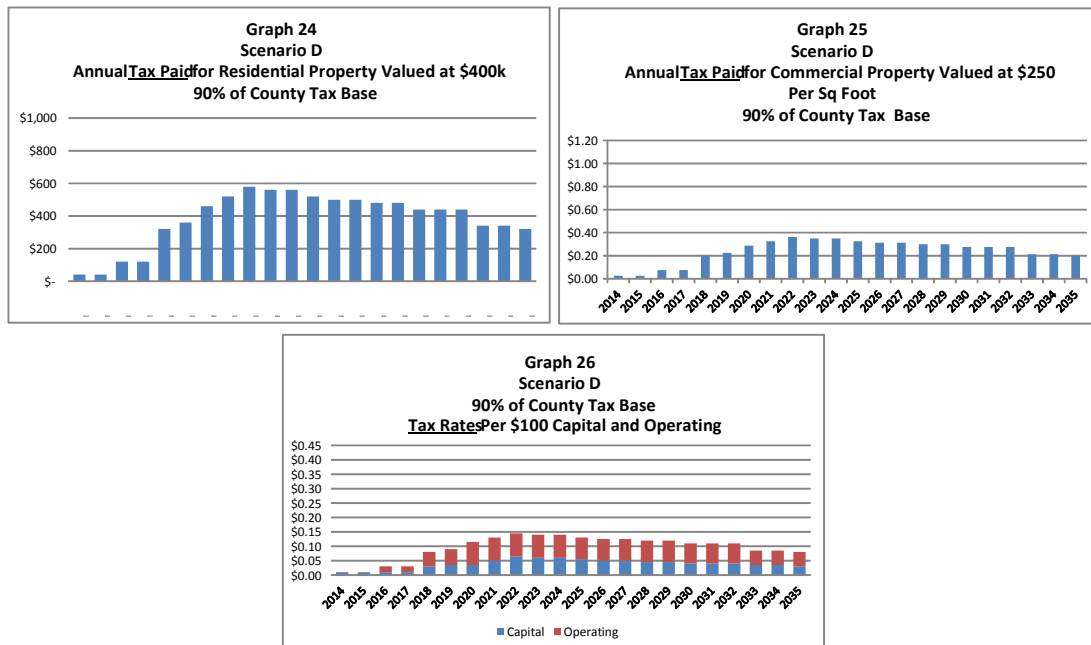
This scenario is the same as Scenario C; however, it assumes that there will be no State contribution.



The average tax on a typical residential property during the period is \$269.09, and the maximum tax on residential properties would be \$360.00 reached in 2028. The average tax on a typical commercial property inside the special taxing district would be \$707.95 and \$336.36 outside of the special taxing district. The maximum tax for commercial properties would be \$1,175.00, which would be reached in 2026. The maximum tax rate for residential properties of \$0.09 per \$100 would be reached in 2028, and the maximum tax rate for commercial properties of \$0.24 would be reached in 2026. The average per square foot increase in office rent would be \$0.35 within the special taxing district and \$0.17 outside of the special taxing district.

■ Scenario D

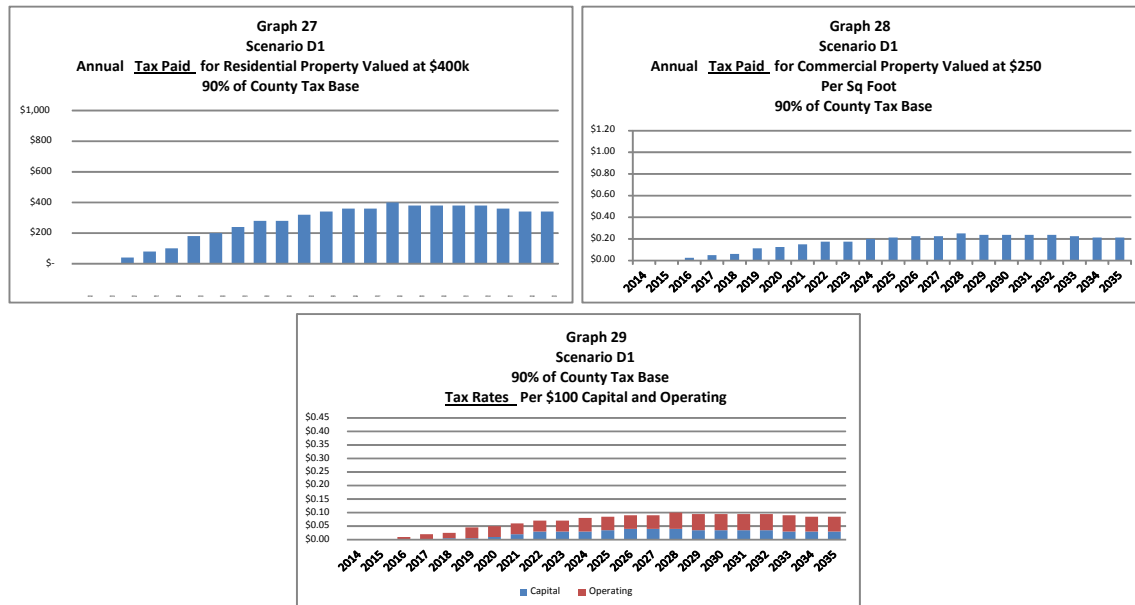
This scenario is the first of four which assume that both capital and operating costs are funded by taxes collected from within a special taxing district comprised of all properties (residential and non-residential) totaling 90% of the taxable base of the entire County. This scenario also assumes that construction of the RTV system will be completed on the Base Implementation Schedule.



The average tax on a typical residential property during the period is \$385.45, and the maximum tax on residential properties would be \$580.00 reached in 2022. The average tax on a typical commercial property would be \$481.82. The maximum tax on commercial properties would be \$725.00, which would be reached in 2022. The maximum tax rate for residential and commercial properties of \$0.15 per \$100 would be reached in 2022. The average per square foot increase in office rent would be \$0.36.

■ **Scenario D1**

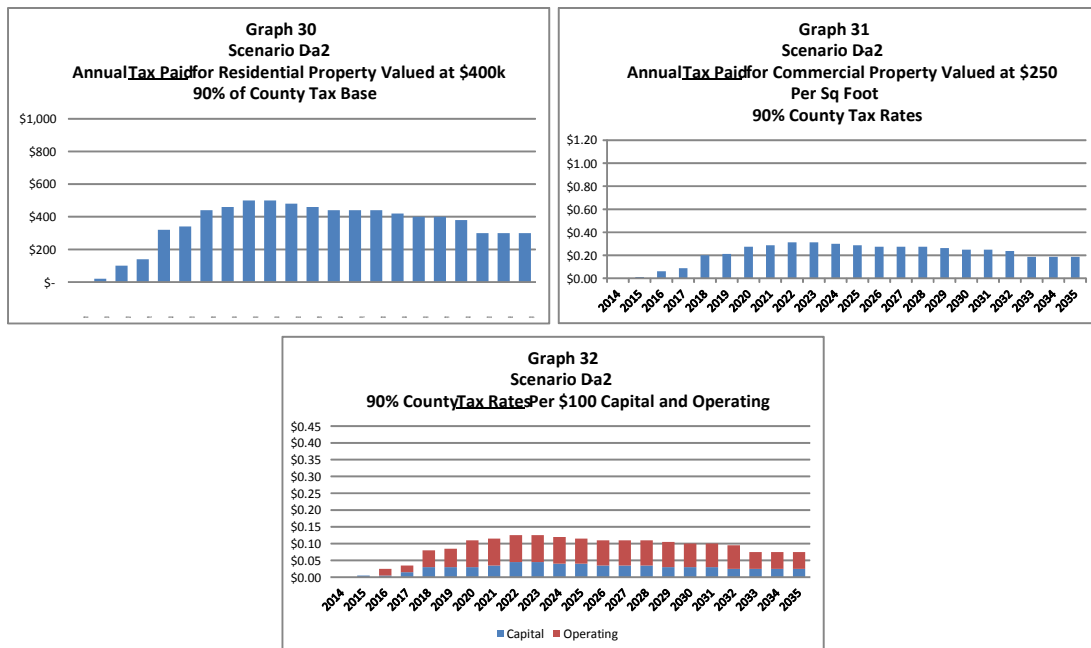
This scenario is the same as Scenario D; however, it assumes the extended (20-year) implementation schedule.



The average tax on a typical residential property during the period is \$260.91, and the maximum tax on residential properties would be \$400.00 reached in 2028. The average tax on a typical commercial property would be \$326.14. The maximum tax for commercial properties would be \$500.00, which would be reached in 2028. The maximum tax rate for residential properties of \$0.10 per \$100 would be reached in 2028, and the maximum tax rate for commercial properties of \$0.10 per \$100 would also be reached in 2028. The maximum average per square foot increase in office rent would be \$0.25.

■ **Scenario D-a2**

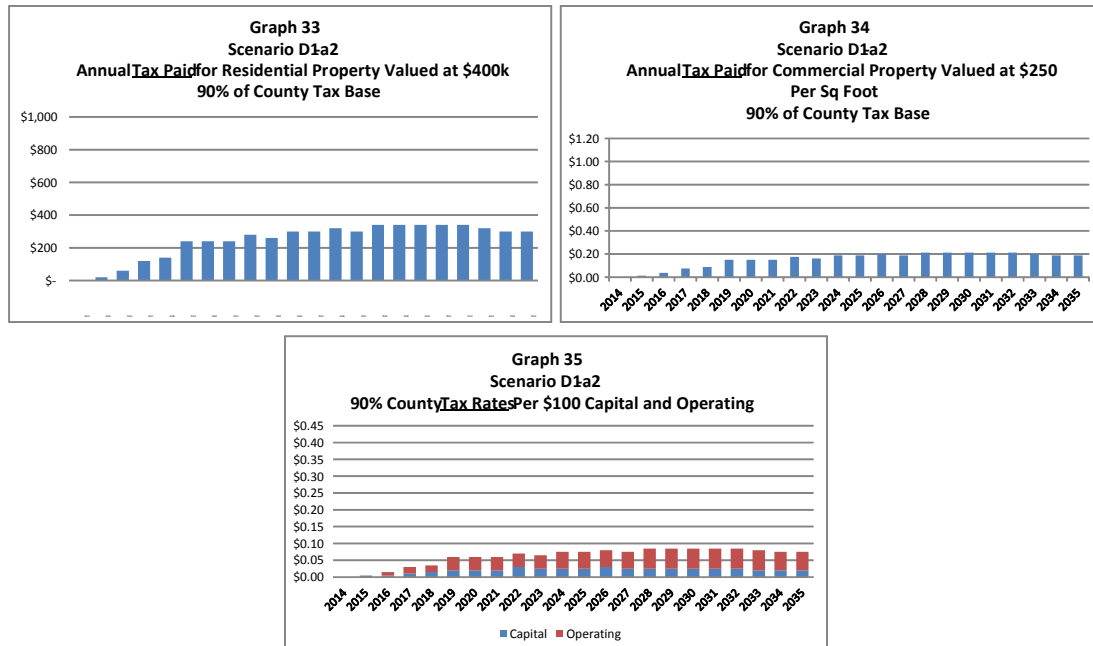
In this scenario capital costs are funded by a property tax on 90% of County tax base; annual debt service related to the CCT's share of RTV system costs (36%) funded by the State; the remaining 64% of annual debt service on the balance of the RTV system is funded by County property tax through 2020, and evenly split between the County and State beginning in 2021 (after current projected completion of The Purple Line). Operating costs are funded by property tax on 90% of County tax base. This scenario assumes the Base Implementation.



The average tax on a typical residential property during the period is \$344.55, and the maximum tax on residential properties would be \$500.00 reached in 2022. The average tax on a typical commercial property would be \$430.68. The maximum tax for commercial properties would be \$625.00, which would be reached in 2022. The maximum tax rate for residential properties of \$0.13, and for commercial properties of \$0.13, would both be achieved in 2022. The average per square foot increase in office rent would be \$0.32.

■ **Scenario D1-a2**

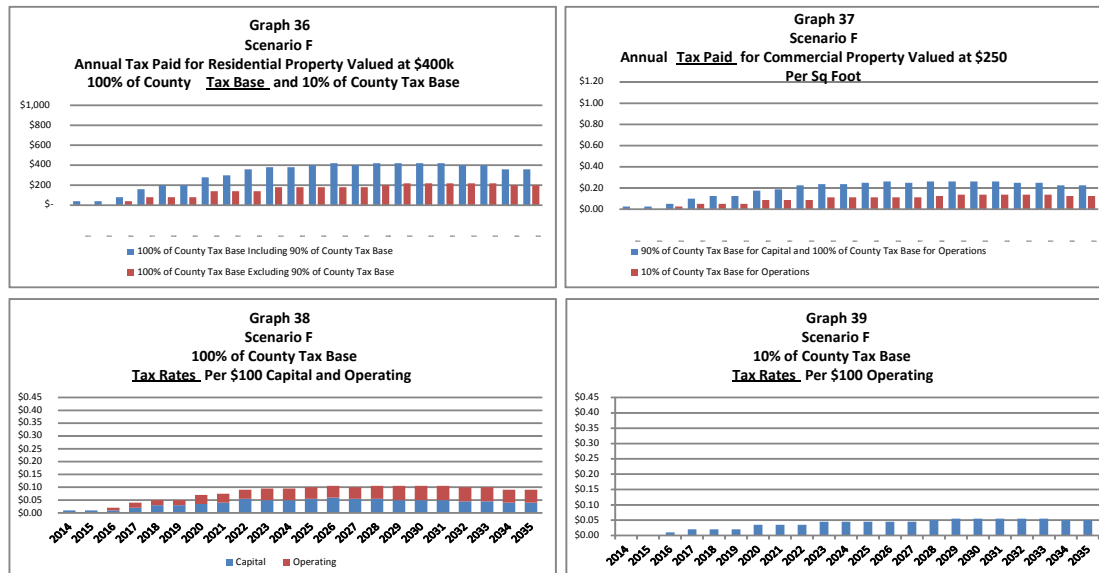
Under this scenario capital costs are funded by a property tax on 90% of County tax base and the above-described contribution from the State; annual debt service related to CCT's share of RTV system costs (36%) funded by State; and, the remaining 64% of annual debt service funded by County property tax through 2020, and evenly split between County and State beginning in 2021. Operating costs are funded by property tax on 90% of County tax base. This scenario assumes the 20 year implementation schedule.



The average tax on a typical residential property during the period is \$247.27, and the maximum tax on residential properties would be \$340.00 reached in 2028. The average tax on a typical commercial property would be \$309.09. The maximum tax for commercial properties would be \$425.00, which would be reached in 2028. The maximum tax rate for residential and commercial properties of \$0.09 per \$100 would be reached in 2028. The maximum average per square foot increase in office rent would be \$0.21.

■ Scenario F

This scenario assumes that capital costs are funded by a property tax on 90% of County tax base; that operating costs are funded by a property tax on 100% of County tax base; that there is no State contribution; and, that the system is completed in 2032.



The average tax on a typical residential property during the period is \$310.91, reaching a maximum level of \$420.00 in 2026. The average tax on a typical commercial property would be \$388.64, reaching a maximum of \$525.00 in 2026. The maximum tax rate for residential and commercial properties of \$0.11 per \$100 would be reached in 2026. The maximum average per square foot increase in office rent would be \$0.26 in 2028.

This scenario also does not require any change in State law.

4. Alternative Plan of Implementation: Phase One Only

While the Task Force supports completion of the full RTV network, the purpose of this Subsection of the Financial Plan is to provide an option for the County Executive and Council to implement Phase One of the RTV system as the Task Force has defined it above, plus the entire CCT, at the outset. This would afford the County the opportunity to evaluate the benefits of the RTV system as built, before adopting a financial plan for the entirety of the RTV system. This would allow decision-makers to give fuller consideration to the extent to which the State will be able to contribute to funding of the balance of the RTV system in the future, when the State has had an opportunity to resolve issues relating to the restoration of the State's Transportation Trust Fund. In the event

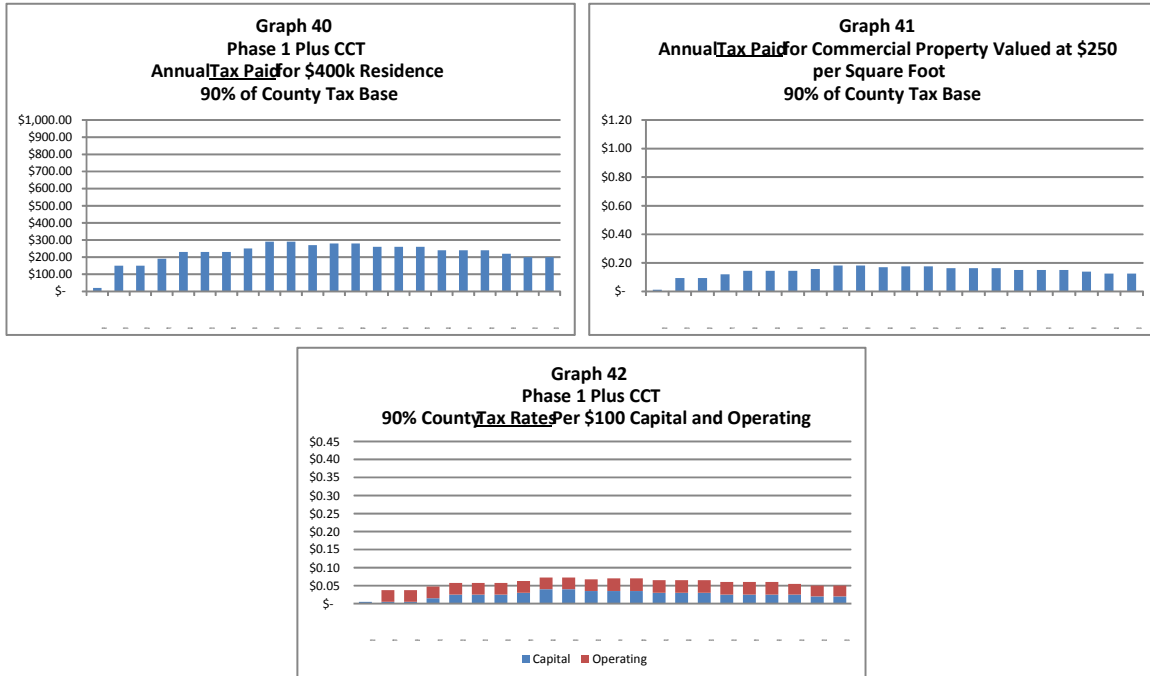
that decision-makers select this alternative, the adjusted Phase One of the RTV network would include a total of 83.8 linear miles in seven corridors, of which 60.9 miles would involve new construction⁵⁷. Based on the same capital cost estimates prepared for the entire RTV system, the Task Force estimates that the total cost of Phase One of the RTV system in base year dollars would be approximately \$1.226 billion, including approximately \$1.071 billion in direct development costs and \$154.5 million in indirect costs that will benefit the entire network but that must be incurred during development of Phase One.

With regard to the financing of those costs, the same financial structure proposed for the entire system is recommended for the development of Phase One. Capital costs would primarily be financed through the use of debt, the debt service on which would be paid by a combination of a State contribution relating to the CCT portion of the development, with the balance of costs paid by local revenues derived through a special taxing district tax. It must be clearly understood that while both Stage 1 of the CCT (9.1 miles) and Stage 2 of the CCT (5.9 miles) have been included in this alternative scope and financial plan, the actual development of Stage 2 of the CCT is subject to the availability of funds when planning and construction thereof is required to commence in the phasing of the alternative scope described herein. The Task Force also recommends that during any transitional period there be a redeployment of existing resources to provide enhanced express transit services to Germantown and Clarksburg until such time as other RTV corridors (including Stage 2 of the CCT, for example) are completed. It should also be noted that if there is any delay in construction of Stage 2 of the CCT, costs attributable to that stage will be deducted from the total capital cost.

It is proposed that, in such a circumstance, the geographic scope of the special taxing district would be comprised of properties having 90% of the real property tax base of the County, both for capital and operating cost purposes. Assuming the State contribution as described above, this would mean that the uniform tax rate for all special taxing district taxpayers would reach a maximum of \$0.073 per \$100 of assessed valuation in 2022, and that the maximum tax bill for a typical residence of \$400,000 in assessed valuation would be \$ \$290.00 in 2022. The tax rate for a typical commercial

⁵⁷ These corridors would include the ICC (the only corridor not involving new construction), Randolph Road, Md. 355-South, Route 29-Colesville Road, Georgia Avenue, Veirs Mill Road, and the CCT. In addition to the first 9.1 miles of the CCT, this approach would also include construction of the 5.9 mile second stage of the CCT toward the end of the development period.

property valued at \$250 per square foot would be \$0.18 per \$100 of assessed valuation in 2022, and the typical tax bill for a 2,000 square foot commercial property would reach a maximum of \$362.50 in 2022. The foregoing tax bills are stated in 2012 constant dollars. The following charts graphically depict the above amounts:



5. Summary of Scenarios

In all scenarios, the tax impacts for the first 2-3 years would be quite low (e.g., \$0.01 to \$0.02 per one hundred dollars of assessable value for residential properties, translating to \$40 to \$80 additional annual tax on an average \$400,000 home), because there would be no operating expenses to be paid and there would only be engineering, designing, and other pre-development capital costs incurred. In all scenarios, the capital investment assessments would begin to accelerate in years 3-8 (i.e., 2015 – 2020), because the first phases of route construction would commence, and the first phase of routes would become operational. The projected peak of capital investments (under the Task Force’s recommended 9 - year build-out schedule, as more fully explained above) would be expected to be in the year 2022. In all scenarios under the 9-year Base Implementation Schedule, the annual tax burden for capital investment then begins to diminish each year thereafter, during which time operating expenses would be escalating due to more phases becoming operational. In this way, the combined obligations for

capital investment debt service and funding operating expenses would result in more level annual tax burdens in later years.

There are a range of alternatives for funding operating expenses, particularly because operating expense funding would not be projected to begin until 2016. This affords the County four years to anticipate those potential annual budget requirements. In the event that using the special taxing district approach to funding operating expenses is not available, the County may wish to consider increasing the existing Countywide mass transit tax to defray these costs⁵⁸.

F. Policy Judgments to be Made Relating to Financial Scenarios

Assuming for the sake of this section of the Report that the decision is made to move ahead with development of the RTV system and that some variation of the method for structuring the financing of the system as proposed herein is adopted, including the use of special taxing districts, decision-makers will be faced with the difficult decision of how the burden of paying for the system will be allocated among real property taxpayers within the County.

The Task Force does not make a specific recommendation regarding which of the foregoing scenarios should be adopted, in part because they are not the only variations that could be selected. Nevertheless, the Task Force recommends that the County Executive and County Council elect to proceed using the most expeditious possible schedule for implementation (e.g., the nine year implementation period, rather than a 20 year implementation period), and that the County adopt a funding structure that allocates the burdens of paying for development and operation of the RTV system across the broadest possible base of taxpayers, with a uniform tax rate⁵⁹. Creating the RTV system will be creating a benefit for everyone. Those who own property of greater value will, by definition, pay more; however, by setting uniform non-discriminatory tax rates the County will be making a profound statement for the present and the future.

⁵⁸ At present, the Countywide mass transit tax is dedicated to defraying the operating losses of the Ride-On bus system.

⁵⁹ As noted above, existing law does not allow for special taxing districts to set different tax rates for different classes of taxpayers. Therefore, the Task Force's recommendation on this subject eliminates the necessity for the County to seek new authority from the General Assembly, at least on this subject.

VII. RECOMMENDATIONS

The Task Force proposes and recommends the creation of a comprehensive transit system for Montgomery County, as follows:

1. Formation and Scope of System

The Montgomery County Government (the “**County**”) should develop and operate a comprehensive transit system, one that includes both the proposed Rapid Transit Vehicle (“RTV”) network and a revised Ride-On system. This new comprehensive system should effectively and efficiently integrate with all other transportation modes including local circulator bus operations, the Washington Metropolitan Area Transit Authority (“WMATA”) subway and Metrobus systems; bicycle routes and pedestrian ways. The system should be designed so as to enable the termini of RTV routes to meet major arterials of neighboring jurisdictions, either now or in the future, and to allow the development of a regional transit system if and when desired.

The County should forthwith adopt measures to enable continued planning and initial preliminary design of the RTV System and redeployment of the Ride-On system to proceed while final decisions as to its nature and scope are being determined by the County Executive and County Council. Included in these steps should be environmental assessments to ensure that no time is lost in obtaining whatever federal and state clearances may be required.

The proposed RTV System is depicted on **Appendix D-4**. It is understood that planning should be undertaken as to how the System will be optimized when it begins operations – so that Ride-On buses are properly integrated with the RTV system so as to be a “feeder” network for RTV. Such operational optimization planning should be performed throughout planning and design, and continue into the future as the System grows to ensure the best access and connectivity. Local circulators should also be integrated with the RTV System.

2. Unified System; Integration with Plans, and Phasing of Build-Out

The RTV System will be planned, designed, and constructed as a unified and complete system. It is proposed that appropriate actions be taken forthwith by the Montgomery County Planning Board and, through it, the County Council, to make the necessary modifications to functional plans and the County’s Master Plan of Highways and Transitways to allow prompt development of the RTV System in a manner that will

optimize RTV System performance, and that such authority as necessary and appropriate be granted to permit development of the RTV System in the form of a network consistent with the corridors contained on **Appendix D-4**. While phasing of the actual construction of the RTV network will be based on a variety of factors, including expeditious realization of economic benefits and technical questions relating to physical construction as well as traffic impact and mitigation during construction, all other things being equal, it is proposed that the phasing of build-out of the RTV System be accomplished for those corridors in the sequences set forth in **Appendix D-4** attached. **The financial plan described below is predicated on the phased build-out described therein. The Task Force recommends the completion of the RTV System by the end of calendar year 2021 (“Base Case”).** However, it is understood that if the County determines to develop the RTV System at a slower pace (“Extended Case”), there may be a different phasing plan adopted. The goal is for policy-makers to complete all enabling actions to begin implementation of this proposal within one year of the date of this Report, make decisions regarding financing and organizational questions within that period, and to get a head start on certain aspects of the planning and initial design questions relating to the RTV system within that period so that running time is not lost. Additionally, any enabling actions of the Maryland General Assembly that may be required should be completed by the end of the 2013 Legislative Session.

3. General Approach to Funding and Financing of RTV System

While some level of federal funding of capital costs for the development of the RTV System will be sought, it has been concluded that significant federal funding is unlikely to be available in the near to intermediate term and being dependent on it for RTV System planning and development is unwise. Further, the process leading to approval and binding commitment for the funding of a federal share of capital costs is too lengthy. In addition, the planning of the RTV system should not compete with pending Federal funding applications for other important transportation infrastructure projects, such as The Purple Line. Therefore, the funding and financing plan contemplated by the Task Force provides for full interim funding from state and county sources, with Federal contributions, if any, to follow, if made available at some future date. That portion of total RTV System development funding not contributed by federal and state sources will be funded by the issuance of bonds supported by *ad valorem* real property tax revenues realized through a tax imposed by one or more special taxing district specially established

by the County (the “**Special Taxing District A**”). Under the proposal, Special Taxing District A should consist either of a geographic area located within ½ mile of the corridors contained in the RTV network (excluding those properties along the Inter-County Connector, which are not also along one of the crossing corridors), or a district covering real property encompassing those with 90% of the assessable real property tax base of the County. This proposal contemplates that the State will enter into an agreement with the County and the Authority defined below pursuant to which the state will make an annual contribution from the State Transportation Trust Fund (“**TTF**”) toward defraying a portion of the annual debt service payments on the bonds referred to above (the “State Contribution”). Thus, the State Contribution, when added to the proceeds of the Special District Tax as defined below, will support the annual debt service on the bonds.

With respect to operating costs, it is recommended that a separate Special Taxing District be established to collect *ad valorem* real property taxes to defray operating deficits of the RTV System (“**Special Taxing District B**”).

4. Special District Tax

The County should take the necessary steps to create Special Taxing Districts to collect, on an on-going basis, a special real property tax imposed on all real property located within the geographic boundaries of the Special Taxing District or Districts (the “**Special District Tax**”), for the purpose of creating a dedicated funding source for the development, operation and on-going maintenance and expansion of the RTV System. A Special District Tax designated for capital purposes shall be a dedicated source of funding for interest and principal payments due on special obligation bonds that will be issued by the County (or its designee) for the purpose of funding capital costs of the RTV System. The amount of the Special District Tax shall be calculated so as to satisfy debt service requirements on the total Capital Costs as defined in paragraph 10 below, reduced by an amount equal to those Capital Costs actually funded from federal and state payments, and other sources developed to defray capital costs (“**Debt Service Requirements**”). Receipts from the Special District Tax will be deposited into a dedicated special fund which shall, by law, be used solely for the purpose of meeting Debt Service Requirements (“**Special Fund A**”). To the extent that any funds in Special Fund A are not required to be used to meet Debt Service Requirements, said funds shall be retained in Special Fund A pursuant to restrictions thereon established by statute and

in bond indentures and operating resolutions of the agency building and operating the System. It is anticipated that over time restrictions imposed by the bond indentures shall be reduced. This will cause certain portions of the required reserves to become unencumbered. Such funds will be available for the purpose of meeting certain capital reserve needs of the RTV System, including the replacement of vehicles and other equipment, and the refurbishment or replacement of stations. Operating resolutions may provide for the use of unencumbered reserves in Special Fund A for the purpose of RTV System improvements (including expansion). All other revenues realized, including but not limited to Operating Receipts as hereafter defined, contributions by other levels of government toward Operating Expenses as defined in paragraph 10 below, contributions by private parties, and other revenues, shall be deposited into a dedicated special fund which shall, by law, be used for the general purposes established by operating resolutions of the Board and the RTV System's budget ("**Special Fund B**").

5. Reorganization of Transit Functions

It is recommended that to establish the comprehensive, integrated and unified RTV System contemplated hereby, and to effectively manage the same, the County should explore whether it is necessary to reorganize the transit-related functions of the Montgomery County Government and repose them in a single quasi-independent authority that will be responsible for the planning, design, financing, construction, operation and maintenance of the RTV System as a whole. In giving consideration to the above, it is recommended that decision-makers consider the need for an entity that has a single-purpose focus, and one empowered to use streamlined procurement and other processes to enable economical and efficient development and operation of the RTV System.

6. RTV System Design and Development

Actual design and construction of the RTV System should be performed pursuant to a design-build method of procurement and implementation so that each phase of the RTV System is planned and constructed seamlessly and on a "turn-key" basis. Task Force research has determined that using this method will produce a system in the most timely and cost-efficient manner. Engagement of the professional design and engineering team, as well as the one or more firms that will construct the RTV System, shall be supervised by the agency responsible for the development and operation of the RTV System on a competitive basis. It is also recommended that the Montgomery County

Government establish an internal unified team to review and process any and all permits and authorizations as the RTV System is planned and constructed.

7. Land Utilization for the System

It is understood that the predominant amount of road property to be used for development and operation of the RTV System will be on land owned by the State of Maryland. Accordingly, it will be necessary for the County and/or the agency supervising development and operation of the RTV System to enter into one or more agreements with the State of Maryland, and more particularly with the State Highway Administration (“SHA”) within the Maryland Department of Transportation (“MDOT”) that will govern all aspects of the use of such property, and compliance with or waivers from the regulatory requirement of SHA and/or MDOT. The RTV System will be developed on a combination of land that is owned by Montgomery County, the State of Maryland (i.e., existing right-of-way), or by private parties who contribute land for use as a part of the RTV System. Additional real property to be used in the RTV System may be taken for public use by the County under its power of eminent domain. As a part of the RTV System, it will be necessary to construct maintenance and storage facilities for “rolling stock” and other equipment of the RTV System, the cost of which shall be a Capital Cost as defined in paragraph 8 below.

8. RTV System Capital Costs

The estimate for the total cost to plan, design, engineer, and construct the RTV System, to provide for “pre-opening expenses,” and to provide for reasonable contingencies and capital reserves of and for the RTV System (the “**Capital Costs**”), is set forth on the attached **Appendices E-1 through E-3**. For the purposes of this Report, it is anticipated that the sources of money to meet Capital Costs are as set forth in Part VI of this Report.

9. Financing Plan

Specific alternative structures of the financing of the Capital Costs of the RTV System development are set forth within Part VI of this Report. These are intended as illustrations of how the special taxing district structure can be joined with State contributions and capital bonds to finance the development of the RTV System during the entire course of planning and construction. The tax rates applicable to each alternative, and the amount of actual tax that would be charged to hypothetical taxpayers under each scenario in constant 2012 dollars, are set forth within the above-noted exhibits. **While**

the Task Force does not recommend adoption of a specific structural scenario, the Task Force recommends that the County Executive and County Council elect to proceed using the most expeditious possible schedule for implementation (e.g., the nine year implementation period, rather than a 20 year implementation period), and that the County adopt a funding structure that allocates the burdens of paying for development and operation of the RTV system across the broadest possible base of taxpayers, with a uniform tax rate.

10. RTV System Operating Expenses

Operating expenses, which include all costs of operating the RTV System (“**Operating Expenses**”), will be funded by operating receipts collected at the “fare box” of the integrated RTV and Ride-On system (“**Operating Receipts**”), and to the extent Operating Receipts are insufficient, by subsidies from federal, state and local sources, including the Special Taxing District, as described above. Projections of Operating Expenses for the period from the opening of the System through the first stabilized year of operations are set forth on the attached **Appendices E-1 through E-3**. Specific alternative scenarios for how special taxing district receipts would be collected are set forth in Part VI of this Report. The tax rates applicable to each alternative, and the amount of actual tax that would be charged to hypothetical taxpayers under each scenario in 2012 constant dollars, are set forth within the above-noted exhibits.

11. Security and Snow Removal

The operating plans to be developed for the RTV System will include elements dealing with public emergency matters, including fire rescue response and snow removal. Such plans will also contain specific procedures for how emergency vehicles will have priority to cross transitways used by the RTV System. Such policies and procedures will need to be determined through cooperation of the appropriate County and State agencies.

VIII. CONCLUSION

People living and working in, and traveling through, the County, experience increasing congestion on highways and roadways. Travel times are increasingly unpredictable. Indeed, the length of “rush hour” has expanded over the last few decades so that traditional peak periods of congestion have expanded to include several hours of the day in both the morning and evening. This congestion has increased air quality problems. Balanced economic growth has also been adversely effected by vehicular congestion. While State and local policy-makers have developed plans for “smart growth” real estate development, transportation constraints have made it difficult, if not impossible, to implement these planning approaches, and land use plans adopted in conformity with those policies.

While a balanced overall approach to addressing our transportation needs is required, including but not limited to investment in road maintenance and construction as appropriate, alleviation of congestion problems, and improvement of environmental health and our quality of life requires that our community increase the capacity of existing transportation assets within the given physical limitations that we face.

This Report and the Recommendations contained herein contemplate the creation of a people-moving capacity asset as described more fully in the Report. The Task Force refers to it as an RTV network or system, with RTV standing for a sophisticated, surface level rapid transit vehicle system. These systems are frequently referred to as bus rapid transit (“BRT”) systems; however, the Task Force has deliberately elected to refer to it as an RTV system because the nature, appearance and performance of the system will be qualitatively different from what is typical of BRT systems in the United States or abroad, which do not have qualities that will make them transformative nor become transportation solutions of choice.

As the Recommendations contained in this Report are considered and discussed, the Task Force hopes that the general public and policy-makers will understand that while adoption of the RTV system we propose is advisable to help alleviate existing problems, it is even more essential to create future opportunities and avoid extraordinary future problems. These include intolerable congestion and the County’s compromised ability to chart its own destiny in terms of the implementation of adopted land use policies, and the economic climate the County wants to create.

During its deliberations the Task Force has become aware of certain concerns about what the Task Force is proposing – and those concerns must be addressed directly. There are those who prefer to see our County remain as it has, in their view, been in the past: a relatively idyllic suburban community. To people holding this view, the development of a rapid transit network unleashes too much growth and development and fundamentally changes the community in which we live. Leaving to the side that the suburban place of earlier generations of Montgomery County residents has already fundamentally changed, we must also face the fact that not implementing the County's already existing growth policies will not prevent some growth from taking place and will no doubt result in increasing traffic congestion without the attendant benefit of a vibrant and balanced economy and the tax revenues needed to maintain our services and quality of life.

There are also those who are worried about what will happen to our road system if we repurpose lanes or take more property to enable the County to build the rapid transit system being proposed by the Task Force. This concern again gives evidence of the underlying and persistent belief that by refusing to make certain changes in our transportation policies (and by continuing to treat automobiles in the same way we have for the last 60 years) we can prevent the exacerbation of our traffic congestion problems. The truth is, there are limits to how much real estate we can devote to our road system – and we must figure out how to more efficiently use that scarce resource. The best way to increase capacity is to shift more people to transit.

There are also those who have raised questions about what a system with lanes dedicated to a rapid transit system will do to the technical functioning of road ways, including how vehicles will make various kinds of turns and how the safety of pedestrians will be assured. While reasonable, and issues that must be addressed, such questions relate to specific design solutions about a myriad of specific locations. They are reasons to plan and design carefully. They are not reasons to decline to build the system. Other jurisdictions have found ways, some routine and some imaginative, to address these concerns. So can Montgomery County.

Finally, there are and will be those who are concerned about the cost of the system, how the County will pay for it, who will pay for it, and whether it is prudent to make such an investment in a time of unique stress on public sector and family budgets. The Task Force has taken these questions very seriously. However, it is obvious that

meaningful solutions to a serious problem that has vexed our community for more than a generation will not be solved without a significant investment. The word “investment” is thrown around too frequently in describing some kinds of expenditures. In this case, the concept applies. We will be investing in the future strength of our community.

Notwithstanding all of the foregoing, the question we should be asking is: “What will happen if we do nothing different – and simply cling to our current approaches in the hope that things will turn out alright?”

The Task Force has been reminded of two famous definitions of the word “cynic.” Oscar Wilde defined a cynic as someone “who knows the price of everything and the value of nothing.” Sydney Harris (American Journalist) captured the thought a bit differently: “An idealist believes the short run doesn’t count. A cynic believes the long run doesn’t matter. A realist believes that what is done or left undone in the short run determines the long run.” The Task Force has approached its charge as would the realist. The Task Force urges that our community not leave this vital thing undone – and let us be assured that in the long run we and our children will look back on this time and know that far-sighted and important decisions were made in the interests of that community.

Glossary Of Terms

Abbreviation	Term
BAT	Business Access and Transit
BRT	Bus Rapid Transit System
CCT	Corridor Cities Transit
COG	Council of Governments
EIS	Environmental Impact Statement
EMOC	Equipment and Maintenance Operation Center
DB	Design Build
DBFOM	Design, Build, Finance, Operate, Maintain
DBOM	Design, Build, Operate, Maintain
FDA	Food and Drug Administration
FTA	Federal Transit Administration
GAN's	Grant Anticipation Notes
GSSC	Great Seneca Science Corridor
HOT	High Occupancy Toll
HOV	High Occupancy Vehicle Lanes
ICC	Inter-County Connector
LPA	Locally Preferred Alternative
LRT	Light Rail Line
MCDOT	Montgomery County Department of Transportation
MOS-I	Minimum Operating Segment
MPOH	Master Plan of Highways and Transitways
MS4	Municipal Separate Storm Sewer System
MTA	Maryland Transit Administration
MWCOG	Metropolitan Washington Council of Governments
NEPA	National Environmental Policy Act
PB Study	Consultant's Report for a Countywide Bus Rapid Transit Study
P3's	Public-Private Partnerships
RTV	Rapid Transit Vehicle

Abbreviation	Term
SHA	State Highway Administration
SOV	Single Occupancy Vehicle
TIFIA	The Transportation Infrastructure Finance and Innovation Act
TMC	Transportation Management Center
TOD	Transit Oriented Development
TTG	The Traffic Group, Inc.
TPB	National Capital Region Transportation Planning Board
USDOT	United States Department of Transportation
VMT	Vehicle Miles Traveled
WMATA	Washington Metropolitan Transit Authority
WPMSA	Washington Primary Metropolitan Statistical Area